UKRAINE

Fourth Rapid Damage and Needs Assessment (RDNA4)

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Launch event version

WORLD BANK GROUP

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Abbreviations and Acronyms

ACLED	Armed Conflict Location and Event Data
AQR	asset quality review
BBB	build(ing) back better
BCM	billion cubic meters
BCP	border crossing point
BDF	Business Development Fund
CBRN	chemical, biological, radiological, and nuclear
CCIs	cultural and creative industries
Cedos	Centre for Society Research
CHA	Confirmed Hazardous Areas
CIT	corporate income tax
CRSV	conflict-related sexual violence
CSO	civil society organization
DALY	disability-adjusted life year
DGF	Deposit Guarantee Fund
DTM	Displacement Tracking Matrix
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EO	explosive ordnance
EORE	Explosive Ordnance Risk Education
ERA	Extraordinary Revenue Acceleration
ERCC	EU Emergency Response Coordination Centre

ERW	explosive remnants of war
EU	European Union
G7	Group of Seven
GBV	gender-based violence
GDP	gross domestic product
GMI	Guaranteed Minimum Income
GoU	Government of Ukraine
GW	gigawatt
ha	hectare
HUS	Housing and Utilities Subsidy
ICH	Intangible Cultural Heritage
IDP	internally displaced person
IFC	International Finance Corporation
IFI	international financial institution
ILO	International Labour Organization
IMF	International Monetary Fund
IMSMA	Information Management System for Mine Action
IOM	International Organization for Migration
IT	information technology
KSE	Kyiv School of Economics
kWh	kilowatt-hour
L2UKR	Listening to Ukraine
MDCT	Ministry for Development of Communities and Territories of Ukraine
MFB	multifamily building
MIGA	Multilateral Investment Guarantee Agency
MoE	Ministry of Economy
MoES	Ministry of Education and Science
MoF	Ministry of Finance
MoH	Ministry of Health
MoSP	Ministry of Social Policy
MSEC	Medical and Social Expert Commission
NACS	National Agency for Civil Service
NAS	National Academy of Sciences of Ukraine
NBFI	nonbank financial institution
NBU	National Bank of Ukraine
NEURC	National Energy and Utilities Regulatory Commission
NFI	National Forest Inventory
NGO	nongovernmental organization
NHSU	National Health Services of Ukraine
NPL	nonperforming loan
NPU	National Police of Ukraine
NPP	nuclear power plant
NTS	nontechnical survey
OHCHR	Office of the High Commissioner for Human Rights
PDNA	Post-Disaster Needs Assessment
PEACE	Public Expenditures for Administrative Capacity Endurance
PHC	primary health care
PIM	Public Investment Management

PISA	Program for International Student Assessment
PPF	Project Preparation Facility
PPP	public-private partnership
PPU	Project Preparation Unit
RDDP	Registry of Damaged and Destroyed Property
RDNA	Rapid Damage and Needs Assessment
RES	renewable energy sources
SAMF	State Agency of Melioration and Fisheries
SAWR	State Agency of Water Resources
SESU	State Emergency Service of Ukraine
SFH	single-family house
SHA	Suspected Hazardous Areas
SIC	Strategic Investment Council
SMEs	small and medium enterprises
SOB	state-owned bank
SOE	state-owned enterprise
SPP	Single Project Pipeline
SSSU	State Statistics Service of Ukraine
STI	sexually transmitted infection
SWM	solid waste management
TPP	thermal power plant
TS	technical survey
TSO	transmission system operator
UCPM	Union Civil Protection Mechanism
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations International Children's Fund
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
URTF	Ukraine Relief, Recovery, Reconstruction and Reform Trust Fund
UXO	unexploded ordnance
WASH	Water, Sanitation and Hygiene
WSS	water supply and sanitation
WUO	Water User Organization

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The Fourth Ukraine Rapid Damage and Needs Assessment (RDNA4), covering the period between February 24, 2022, and December 31, 2024, was jointly prepared by the World Bank Group, the Government of Ukraine (GoU), the European Union (EU) services, and the United Nations (UN), in coordination with humanitarian and development partners, academia, civil society organizations, and the private sector.

On the part of the GoU, the RDNA4 was led by the Ministry for Development of Communities and Territories of Ukraine (MDCT), in coordination with the Ministry of Finance (MoF) and the Ministry of Economy (MoE), and with support from the ProSteer Office, the Reforms Delivery Office of the Cabinet of Ministers of Ukraine (RDO), and the Kyiv School of Economics (KSE). All relevant line ministries have participated in the assessment.

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Annex 1 includes a list of main contributors. The RDNA4 team would like to express its deep appreciation to all individuals and organizations who contributed to this assessment.



FOREWORD

As of December 31, 2024, Russia's invasion of Ukraine continues to have profound physical, socio-economic, and environmental impacts, which will be felt for generations. This fourth Rapid Damage and Needs Assessment (RDNA4)—undertaken jointly by the World Bank Group, the Government of Ukraine, the European Commission, and the United Nations, with support from other partners—takes stock of almost three years of the ongoing invasion, estimating damage and losses along with recovery and reconstruction needs for 10 years. Beyond the physical and financial impacts that are more readily quantified, the RDNA4 provides a qualitative description of how people's lives have been dramatically altered since February 2022. RDNA4 builds on the previous three Rapid Damage and Needs Assessments (RDNA1, RDNA2, and RDNA3), which respectively covered the first three months, first year, and the first 22 months.

Considering almost three years since February 2022, as of December 31, 2024, direct damage has reached almost US$176 billion. Damage continues to be concentrated in the housing, energy and extractives, transport, commerce and industry, and agriculture sectors, with a major increase since RDNA3 in the energy sector, reflecting increased levels of damage and destruction despite ongoing recovery efforts. Across the assessed sectors, disruptions to economic flows and production, along with additional costs associated with the invasion (such as debris management), are measured as economic loss amounting to over US$589 billion.

As of December 31, 2024, the recovery and reconstruction needs over the next decade are estimated at almost US$524 billion; this includes needs in both the public and private sectors. While the RDNA4 focuses primarily on war-related impact and recovery and reconstruction, the estimated long-term needs reflect plans to build back better to modern, low-carbon, and resilient standards. Where relevant and possible, the total needs exclude needs already met through the Ukraine state budget or through partners and international support. As part of the RDNA4, eight sectors reported on needs already met in the amount of over US$13 billion, including both public and private contribution. It will be important to continue tracking ongoing implementation and needs met and to address existing data constraints.

The RDNA4 also highlights the Government of Ukraine's recovery and reconstruction priorities for 2025. The 2025 recovery and reconstruction priorities include both public investment projects and non-investment programs totaling US$17.32 billion, with investment projects estimated at US$11.88 billion and non-investment programs at US$5.44 billion for 2025. These priorities encompass urgent recovery needs in nine key sectoral priority areas, grouped into three categories: social sector, infrastructure reconstruction, and demining and civil protection. For public investment projects in 2025, US$5.46 billion of financing has been secured, leaving a financing gap of US$6.43 billion. For non-investment priority programs in 2025, US$1.91 billion has been secured, leaving a financing gap of US$3.53 billion. External financing and innovative funding mechanisms remain critical to supporting Ukraine's recovery trajectory.

The principles of building back better are aligned with the vision, reforms, and investments set by the government's Ukraine Plan and the European Union's Ukraine Facility, as well as the reforms that Ukraine will undertake to align to the EU acquis on its accession path, and other commitments to

sustainable development. These include the long-term development vision of Agenda 2030 and the Sustainable Development Goals as safeguards of inclusive and equitable human development. The RDNA4 findings complement the implementation of these reforms and investments.

Ukraine's authorities and international partners need to continue strengthening Ukraine's capacity for implementation, given the substantial overall needs and limited financing. Global experience shows that a phased approach and development of human capital, underpinned by strategic prioritization across sectors, are critical in this context. Planning should consider approaches to strengthen the absorptive capacity of Ukraine's public sector so it can manage and utilize the financing available, ensure continuous improvement of systems and processes, and increase institutional and technical capacities to promote efficient and effective preparation, implementation, and monitoring of investment projects—all focused on the benefits for the population. The Ukraine Plan includes reforms and approaches to help scale up absorptive and institutional capacity of national and subnational authorities as well as identify investment priorities and determine financing availability.

The Ukrainian private sector has shown remarkable strength in the face of unprecedented disruption and has a major role to play in recovery and reconstruction. Based on previous estimates drawing from RDNA2 results, at least a third of total needs could be covered through private investment (domestic and foreign), including public-private partnerships (PPPs)—provided that enabling reforms and measures are adopted to increase the scope for private participation in different sectors.[1] Maximizing the private sector's contribution and mobilizing private investment will require adequate risk mitigation instruments, structural reforms (such as those found in the Ukraine Plan, notably to improve the business environment and foster competitive markets), and targeted public support.

We stand firmly committed to advancing Ukraine's reconstruction and reform agendas, supporting its steps toward becoming a resilient, modern, and competitive economy, and strengthening its efforts to ensure a future in which its people can prosper and thrive.

The World Bank Group	Government of Ukraine	Directorate-General for Enlargement and Eastern Neighbourhood	United Nations

[1] See International Finance Corporation (IFC), *Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine.* 2023, Link.

EXECUTIVE SUMMARY

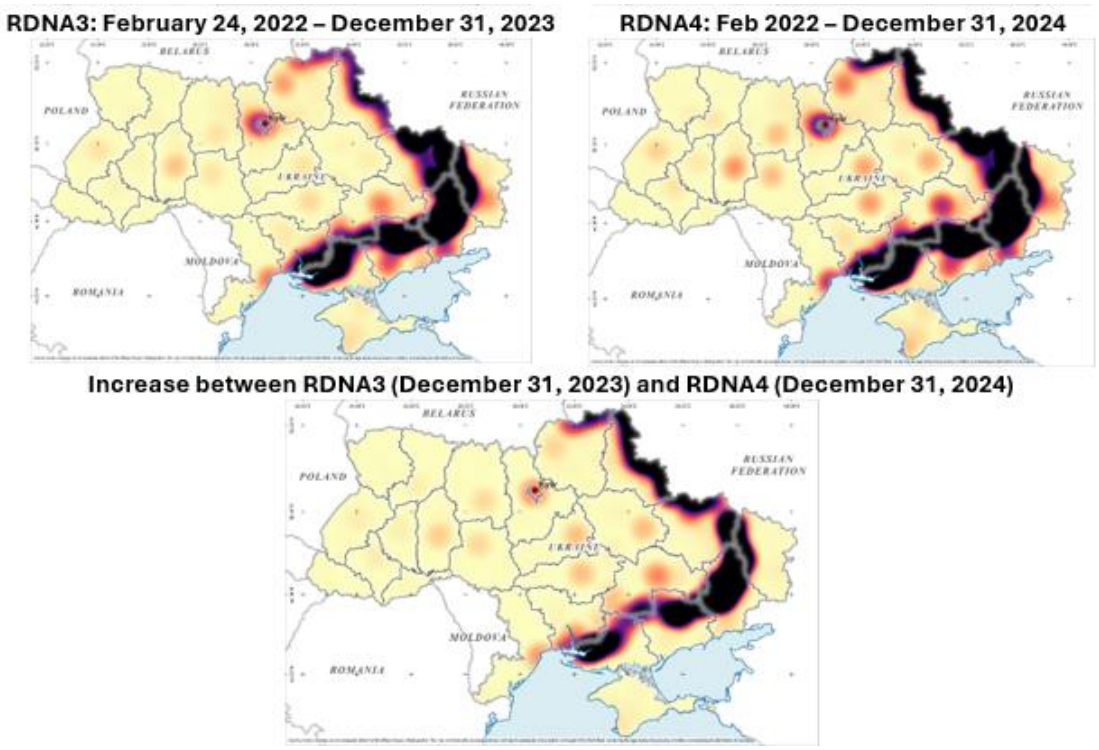
Since February 24, 2022, Russia's invasion of Ukraine has caused civilian casualties and hardship, damage to infrastructure and productive assets, and disruption to the economy. As of December 2024, an estimated 6.2 million people were recorded as refugees across Europe,[2] while 4,642,735 people were officially registered as internally displaced persons (IDPs) by the Ministry of Social Policy (MoSP). Over 12,456 people have been killed, more than 28,000 have been injured, and millions have lost their homes.[3] In addition, poverty has increased: the National Academy of Sciences of Ukraine[4] has reported that poverty rates (based on the actual subsistence minimum poverty line) rose 1.7 times between 2021 and 2023—that is, from 20.6 percent to 35.5 percent.[5] According to the United Nations (UN), some 15 percent of the population, or nearly 5 million people, is estimated to be food insecure as of January 2025.[6] As documented in previous Rapid Damage and Needs Assessments (RDNAs), the impacts of the invasion are uneven, and the greatest effects are felt by those citizens mobilized to fight, women, persons with disabilities, children and youth, IDPs, and older persons. Job and income loss continue, as well as persistently high inflation, affecting purchasing power and causing loss of assets among Ukrainians, particularly the most vulnerable, with a range of human impacts across different sectors. The estimated gross domestic product (GDP) for 2024 was 78 percent of 2021 GDP in real terms, up from 74 percent in 2023. Overall, setbacks in the country's development and in its progress toward many of the Sustainable Development Goals continue to accumulate.

The war intensity has shifted across regions, while active hostilities have remained concentrated in the eastern parts of Ukraine (Figure 1). Within three months of the invasion, direct damage reached US$97 billion.[7] During the latter half of 2022, the Government of Ukraine (GoU) regained control across several areas, which checked the rapid escalation in damage. However, attacks on critical infrastructure in fall and winter 2022 contributed to damage that reached US$135 billion by February 2023.[8] Regular attacks on infrastructure continued throughout 2023, with attacks across battle zones as well as in a number of regions and cities. The destruction of the Kakhovka Dam and hydroelectric power plant in June 2023 resulted in incalculable impacts to the environment and exacerbated challenges already faced by people

[2] UN High Commissioner for Refugees (UNHCR), Operational Data Portal, Link.
[3] Office of the High Commissioner for Human Rights (OHCHR), "Protection of Civilians in Armed Conflict—December 2024," January 7, 2024, Link. The actual figures are expected to be higher; however, the receipt of information and reports is a challenge under current circumstances, and many reports are still pending verification.
[4] Household Socio-Economic Status Survey conducted in 2023 by the Institute for Demography and Life Quality Problems of the National Academy of Science of Ukraine, with UNICEF support. See Liudmyla Cherenko, "Measuring Poverty in the Conditions of War in Ukraine," Working Paper 1, Economic Commission for Europe Conference of European Statisticians, Workshop on Harmonization of Poverty Statistics, Geneva, November 27, 2024, Link.
[5] RDNA4 reports poverty rates following the national poverty methodology using the "Actual Minimum Subsistence" poverty line of UAH 6,166 in 2023. RDNA3 reported a simulated poverty rate using World Bank's Listening to Ukraine (L2UKR) survey data and a preliminary poverty line of UAH 5,220. 2023 poverty estimates by NAS is based on the final official 2023 actual minimum subsistence poverty line of UAH 6,166. Updated WB L2UKR simulations using a subsistence minimum of UAH 6,166 yield poverty rates in line with NAS (NAS calculation = 35.5 percent, and WB updated simulation = 34 percent).
[6] United Nations, "Ukraine Humanitarian Needs and Response Plan," January 2025, Link.
[7] World Bank, Government of Ukraine (GoU), and European Commission (EC), "Ukraine Rapid Damage and Needs Assessment," 2022, Link.
[8] World Bank, GoU, EC, and United Nations (UN), "Ukraine Rapid Damage and Needs Assessment: February 2022–February 2023," March 2023, Link.

struggling to access housing, water, food, and health services, among others.[9] By the end of 2023, total direct damage was estimated at US$152 billion (see Box 1).[10] During 2024, hostilities escalated significantly in several regions, including in the Donetska region, and air attacks intensified throughout Ukraine, damaging urban areas and strategic energy, transport, and other infrastructure facilities (see Figure 1).[11]

Figure 1. Comparison of spatial evolution of the invasion between RDNA3 and RDNA4



Source: Assessment team using information on average monthly conflict events from Armed Conflict Location and Event Data (ACLED), Link. See Clionadh Raleigh et al., "Introducing ACLED: Armed Conflict Location and Event Data," *Journal of Peace Research* 47, no. 5 (2010): 651–60, Link. *Note:* Conflict events include battles and explosions/remote violence as classified by ACLED methodology. RDNA = Rapid Damage and Needs Assessment.

Box 1. Previous Ukraine Rapid Damage and Needs Assessments

RDNA1 estimated US$97 billion in direct damage (between February 24 and June 1, 2022), US$252 billion in losses (comprising 3 months of actual losses and 18 months of projected losses), and US$349 billion in recovery and reconstruction needs (over 10 years).

RDNA2 estimated US$135 billion in direct damage (between February 24, 2022, and February 24, 2023), US$289 billion in losses (comprising 12 months of actual losses and 18 months of projected losses), and US$411 billion in recovery and reconstruction needs (over 10 years). A sum of US$14 billion was estimated as needed to address 2023 implementation priorities.

[9] GoU and UN, "Post-Disaster Needs Assessment: 2023 Kakhovka Dam Disaster, Ukraine," 2023, Link.
[10] World Bank, GoU, EC, and UN, "Third Ukraine Rapid Damage and Needs Assessment: February 2022–December 2023," February 2024, Link.
[11] Regular updates and data from the International Crisis Group, Ukraine, Link; and the Armed Conflict Location and Event Data (ACLED) Ukraine Conflict Monitor, Link.

RDNA3 estimated US$152 billion in direct damage (between February 24, 2022, and December 31, 2023), US$499 billion in losses (comprising 22 months of actual losses and 18 months of projected losses), and US$486 billion in recovery and reconstruction needs (over 10 years). RDNA3 also estimated priorities for 2024 (US$15 billion) as identified by the line ministries.

Sources: World Bank, GoU, and EC, "Ukraine Rapid Damage and Needs Assessment," 2022, Link; World Bank, GoU, EC, and UN, "Ukraine Rapid Damage and Needs Assessment: February 2022–February 2023," March 2023, Link; World Bank, GoU, EC, and UN, "Third Ukraine Rapid Damage and Needs Assessment: February 2022–December 2023," February 2024, Link.

Supported by its partners, the GoU has continued to provide humanitarian assistance and emergency support, as well as lead recovery and restoration efforts. In 2024, some US$4.2 billion was disbursed by the GoU to finance urgent recovery projects in energy, critical and social infrastructure, housing, and humanitarian demining, as well as to provide public sector support. The European Union (EU) and its member states have mobilized over €3.7 billion for humanitarian assistance since February 2022. In addition, the EU has delivered 153,488 tons of assistance to Ukraine through the Union Civil Protection Mechanism (UCPM). The UN in partnership with the humanitarian community supported 15.8 million people in 2022 and 11 million people in 2023 through assistance worth US$6.45 billion. In 2024, the UN development system implemented over US$815 million in investments. The World Bank Group, including the World Bank, International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency (MIGA), mobilized around US$77 billion in financing support for Ukraine between February 2022 and December 31, 2024.

Since RDNA3, Ukraine has taken major steps to improve the process of planning and prioritization, while also pursuing an ambitious agenda for reform, modernization, and accession to the EU. In 2024, the GoU approved the Ukraine Plan to access funds under the Ukraine Facility (€50 billion during 2024-2027), financed by the EC, to support the state budget, stimulate investment, and provide technical assistance.[12] In June 2024, Ukraine also formally opened its accession negotiations with the EU, after being granted candidate status in 2022. The reform efforts associated with the alignment to the EU *acquis* will contribute to the reconstruction by strengthening key sectors and creating an environment conducive to investments. While still in its pilot phase, a major achievement of the GoU has been the development of the Public Investment Management (PIM) system to systematically facilitate the identification and evaluation of recovery and reconstruction projects. As part of this system, projects are integrated into the Single Project Pipeline (SPP), with criteria such as strategic alignment, economic and social impact, and feasibility of prioritizing investments. The Strategic Investment Council (SIC), created in May 2024, supports the harmonization of strategic priorities for public investments, including preparation of proposals for public investments for the SPP. In parallel, the Ukraine Donor Platform, jointly launched by the GoU, the G7 countries, and the EU in 2023, continues to facilitate coordination, funding, the reform agenda, and private sector growth.[13]

The fourth Rapid Damage and Needs Assessment (RDNA4) presents a consistent, validated, and transparent assessment of almost three years of impacts. Jointly developed by the World Bank, the GoU, the EC, and the UN, it presents the impacts as of December 31, 2024, in line with a globally accepted methodology. RDNA4 updates the third RDNA (RDNA3, covering 22 months since February 2022), second

[12] Ukraine Plan as defined by the Annex to the Council Implementing Decision, April 15, 2024, Link.
[13] See the Ukraine Donor Platform website at Link.

RDNA (RDNA2, covering 12 months), and first RDNA (RDNA1, covering three months) (see Box 1). The RDNA4 presents an assessment of the physical damage to infrastructure and buildings as of December 31, 2024, quantifies 52 months of losses (both actual and projected for 18 months from December 31, 2024), and estimates financial needs for recovery and reconstruction for a timeframe of 10 years (see Box 2 with key terms and definitions). To support immediate recovery and reconstruction planning, RDNA4 includes short-term priorities identified by Ukrainian line ministries that have been included in the 2025 budget. Not all these projects are fully funded. The RDNA4 also describes a range of human impacts, with a focus on vulnerable groups, and considers sector-specific effects.

Like the previous RDNAs, the RDNA4 integrates the most recent data and estimations, avoids double-counting, and deducts already-met recovery and reconstruction needs, based on available information. Unlike previous RDNAs, the RDNA4 includes data from the Registry of Damaged and Destroyed Property (RDDP), overseen by the Ministry for Development of Communities and Territories (MDCT). However, the assessment is subject to inherent and documented data limitations and makes certain assumptions due to the ongoing invasion. It is noted that RDNA4 uses a different exchange rate from that in RDNA3, meaning that the changes between RDNA3 and RDNA4 are more significant than the absolute numbers show.[14]

In the identification of 2025 priorities, the RDNA4 follows the structured approach to investment prioritization under PIM, rather than the approach to priorities in RDNA3. While the RDNA3 highlighted investment priorities for 2024 as identified by line ministries, RDNA4 focuses on the priorities captured in the SPP and the 2025 budget. The SPP was established as part of the evolving PIM system, piloted in 2024. The system is still in its early stages of implementation, which presents challenges in fully operationalizing prioritization processes, particularly at the regional and local levels. In addition, non-investment programs were prioritized by line ministries in accordance with the nine sectoral priority areas for recovery and reconstruction approved by the SIC and by the Cabinet of Ministers.[15]

Box 2. RDNA4 key definitions

Damage: Direct costs of destroyed or damaged physical assets and infrastructure, valued in monetary terms. Costs are estimated considering the replacement price prevailing before the invasion.

Loss: Changes in economic flows resulting from the invasion, valued in monetary terms. Examples include disrupted services, increased operating costs, loss of revenue for authorities/private sector, and debris removal.

Needs: Costs for repair, restoration, and reconstruction, considering a build back better premium, such as improvements for energy efficiency, modernization, and sustainability standards, as well as factors such as inflation, surge pricing due to volume of construction, higher insurance, and so forth. Needs are expressed in monetary terms according to market prices prevailing as of December 31, 2024. Needs do not equal the sum of damage and losses.

Recovery and reconstruction financing priorities for 2025: Refer to both public investment projects and non-investment programs identified through Ukraine's PIM system and other government-led prioritization processes as the most urgent for delivery, subject to available financial resources. These priorities are reflected in the 2025 budget, based on the SPP for investment projects and sectoral prioritization for non-investment programs. They

[14] The RDNA4 report uses the exchange rate as of December 31, 2024, of US$1 = UAH 42.039, reflecting depreciation of the hryvnia. The RDNA3 report used the exchange rate of US$1 = UAH 36.5686. This means Ukrainian hryvnias in RDNA4 translate to fewer US dollar equivalents than in RDNA3.

[15] The nine sectoral priority areas are: housing; education and science; heathcare; social protection; energy and mining; transport; water supply and sanitiation; explosive ordnance management; and emergency response and civil protection.

consider strategic alignment, implementation capacity, supply availability, and prevailing conditions and include both capital and recurrent expenditures, with funding contributions from central and local governments, development partners, and other stakeholders.

Summary of Damage and Needs

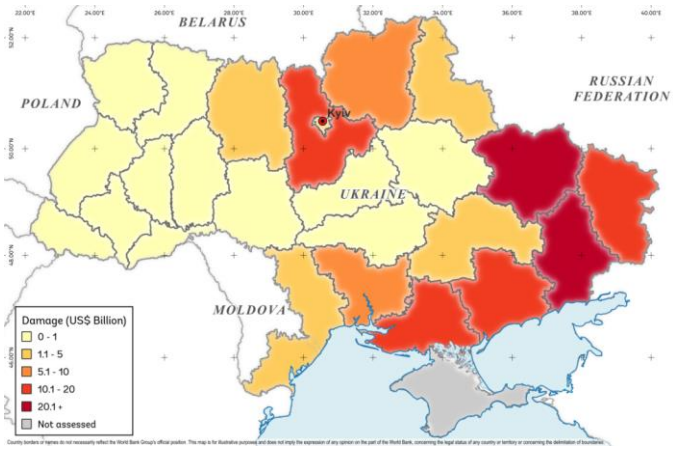
The impacts on Ukraine remain immense. The RDNA4 estimates that about US$176 billion in direct damage to buildings and infrastructure has been incurred. The most affected sectors have been the housing sector (over US$57 billion, or 33 percent of total damage), transport (over US$36 billion, or 21 percent), energy and extractives (over US$20 billion, or 12 percent), and commerce and industry (over US$17 billion, or 10 percent). In the energy sector, there has been a 93 percent increase in damaged or destroyed assets, including power generation, transmission, and distribution infrastructure, although part of this increase is also due to the reclassification of district heating from the municipal to the energy and extractives sector.[16] Across all sectors, the greatest damage has been sustained in Donetska, Kharkivska, Luhanska, Zaporizka, Khersonska, and Kyivska oblasts. Damage in these regions sums to over US$127 billion, or 72 percent of total damage (Figure 2).

Direct damage has increased across all sectors by almost US$24 billion (or 15.5 percent) since the RDNA3 when it totaled US$152 billion (Figure 3). According to the current assessment, 13 percent of the total housing stock has been damaged or destroyed, affecting more than 2.5 million households and making housing the most impacted sector. Compared with RDNA3 results, several other sectors have also shown a stark increase in damage, including energy, education and science, social protection, and justice and public administration. Figure 4 provides a comparison of damage scale across the four RDNAs.

These increases predominantly reflect the continuous damage and destruction, often targeted at particular critical infrastructure assets. However, improved data, adjustments in sectoral classifications, and the adjusted exchange rate have also influenced changes in estimated damage, loss, and needs. In the education and science sector, the Ministry of Education and Science and the MDCT have improved data collection methods to provide more detailed and accurate information, contributing to an increase in estimated damage. In the justice and public administration sector, damage increased due to a wider assessment scope coving more institutions. In the environment and forestry sector, where there was a reduction in damage, the change is mainly due to a downward revision of the estimated area of burned and inaccessible forests, based on more accurate data from the new National Forest Inventory (NFI). In the municipal services sector, a decline in damage (and losses) compared with RDNA3 is linked to the reclassification of district heating to the energy sector and reclassification of several sports facility assets to the education and science sector. These adjustments have resulted in a US$2 billion decrease in estimated damage in the sector in RDNA4, despite an increase in damage across other categories in the sector. Finally, damage estimates in sectors using costing in UAH—such as energy and extractives, transport, emergency response and civil protection, and finance and banking—were impacted by the exchange rate adjustment.

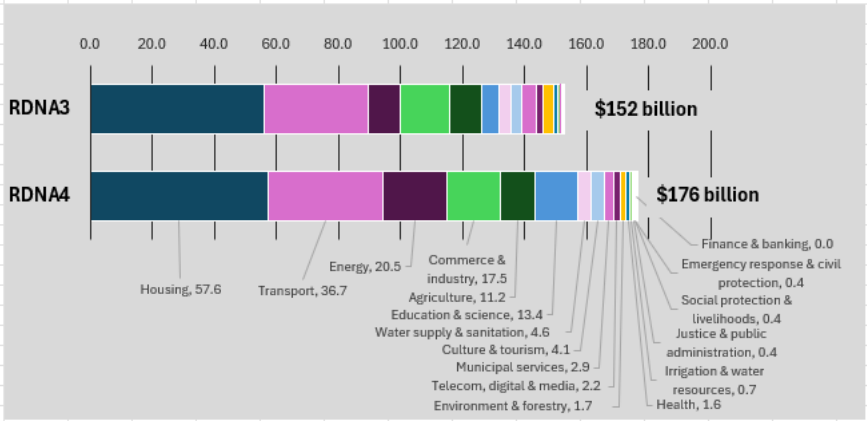
[16] RDNA4 includes district heating (damage of US$2.5 billion) in the energy and extractives sector, just as RDNA1 and RDNA2 did.

Figure 2. Extent of damage by region as of December 31, 2024



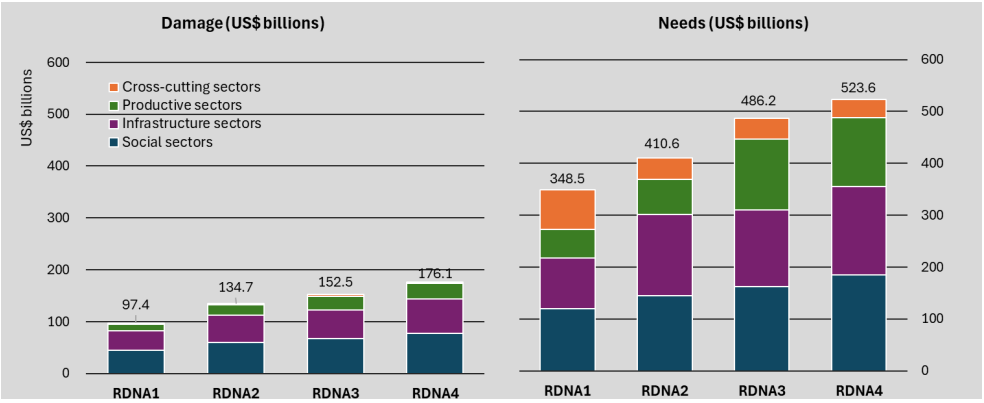
Source: Assessment team. *Note*: The map draws on damage data as collected and assessed under the RDNA4. There were data limitations for certain regions. RDNA4 does not cover the Autonomous Republic of Crimea.

Figure 3. Comparison of damage in RDNA3 and RDNA4 (US$ billion)



Source: Assessment team. *Note*: Units are US$ billion. RDNA4 damage covers the period February 24, 2022, to December 31, 2024. RDNA3 damage covers the period February 24, 2022, to December 31, 2023.

Figure 4. Comparison of damage (left) and needs (right) across Ukraine RDNAs (US$ billion)



Source: Assessment team. *Note*: RDNA1 damage covers the period from February 24, 2022, to June 1, 2022. RDNA2 damage covers the period from February 24, 2022, to February 24, 2023. RDNA3 damage covers the period from

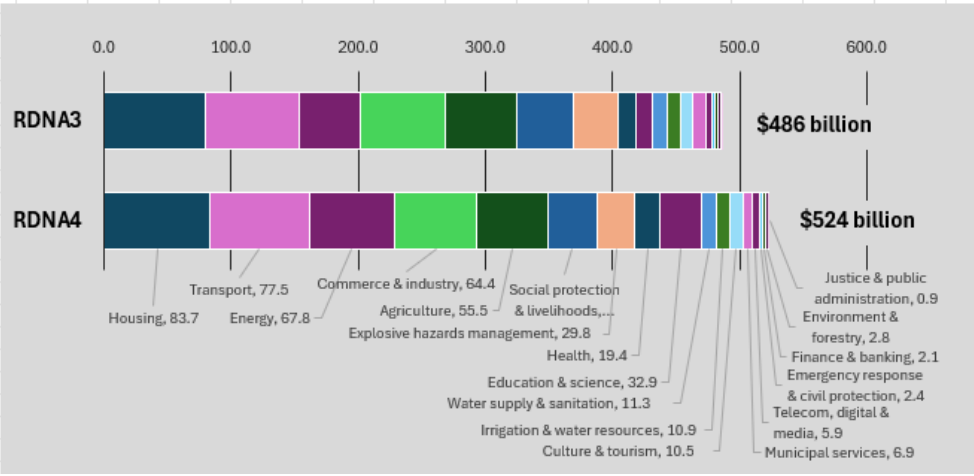
February 24, 2022, to December 31, 2023. RDNA4 damage covers the period February 24, 2022, to December 31, 2024. Needs are counted within a period of 10 years for each respective RDNA.

As of end-December 2024, the recovery and reconstruction needs for a period of 10 years are estimated at almost US$524 billion, which is approximately 2.8 times the estimated nominal GDP of Ukraine for 2024. These considerable needs arise from the large geographical area (including dense urban areas) affected for almost three years, as well as from ongoing damage and destruction. Like previous RDNAs, the needs include measures required for lower energy intensity and more resilient, inclusive, and modern standards, as well as surge pricing (commonly observed when large spatial areas are reconstructed), inflationary pressures, and higher insurance premiums.

Reconstruction and recovery needs are the highest in the housing sector (almost US$84 billion, or 16 percent of the total long-term needs). This is followed by the transport sector (about US$78 billion, or 15 percent), energy and extractives sector (US$68 billion, or 13 percent), commerce and industry sector (US$64 billion, or 12 percent), and agriculture sector (US$55 billion, or 10 percent). Across all sectors, the cost of debris clearance and management alone reaches almost US$13 billion. Regions with the greatest positive net change in needs since December 2023 include Donetska, Kharkivska, Zaporizka, Luhanska, and Khersonska oblasts.

The increase in needs amounts to over US$37 billion (almost 8 percent) compared with RDNA3, when needs were around US$486 billion (see Figure 5). This increase reflects the observed changes related to damage and other factors. For example, increases in damage in infrastructure and social sectors have translated into corresponding increases in needs. For the vast majority of sectors, needs have increased, driven primarily by the impacts of continued attacks. As outlined above, efforts across sectors to collect data, update cost estimates, and further prioritize needs have also impacted overall cost estimates in some cases. For example, for demining and the management of explosive hazards, estimated needs have decreased from about US$35 billion (RDNA3) to US$30 billion (RDNA4) due to improved data availability in line with previous RDNAs, as well as progress in survey and clearance operations. Figure 4 provides a comparison of the total needs across all four RDNAs.

Figure 5. Comparison of needs in RDNA3 and RDNA4 (US$ billion)



Source: Assessment team. *Note*: Needs in both RDNA reports cover a period of 10 years.

As recovery and reconstruction are ongoing, some needs have already been met by the GoU with the support of its partners; where data were available, these were not included in the estimated total long-term needs. As part of the RDNA4, eight sectors reported on needs met in the amount of over US$13 billion (although all sectors noted limitations in relevant data that constrain comprehensiveness and robustness). For example, according to GoU data, at least US$1.2 billion was disbursed from state budget and donor funds for housing sector recovery in 2024, mostly for compensation, repair, and reconstruction of damaged assets. Key repair efforts allowed the electricity import capacity to increase to 2.1 gigawatts (GW) from 1.7 GW by December 2024. The Ukrainian export corridor and the Danube ports cluster revitalized trade routes, handling 97.2 million tons of cargo in 2024—a 57 percent increase over 2023. Emergency repairs were carried out on over 2,000 km of motorways, highways, and other national roads; 115 road bridges were restored using temporary structures, including 29 modular bridges donated by international partners. Since January 2023, the share of educational institutions with bomb shelters has increased from 68 percent to 90 percent.

Acknowledging data limitation, to date almost half of recorded needs were covered by the private sector.[17] This highlights its critical role in the recovery and reconstruction process and in provision of needed resources. Many firms have started to invest in repairs and resilience, such as distributed energy solutions (e.g., gas power plants, solar panels, biogas). Private sector firms have accounted for most of needs met in the commerce and industry, finance and banking, and telecoms and digital sectors. While financing conditions remain difficult, they improved in 2024, and capital expenditure needs have accounted for a growing share of the corporate demand for loans in recent months. Some needs in commerce have been met amid reconstruction efforts and partial economic recovery, especially in proximity to the big cities, where some large retail shopping centers managed to repair damage, rebuild, and resume operations in 2023–2024. In the digital and telecommunications sector, an estimated US$115.6 million in needs was covered by mobile and fixed operators to restore internet lines and towers. As part of an inflow in foreign direct investment, the European Bank for Reconstruction and Development (EBRD) and the IFC committed US$435 million to support the merger of Lifecell and Datagroup-Volia, creating the country's second largest telecom operator. Additionally, VEON – global digital operator – committed US$600 million to enhance connectivity and deliver digital services essential for reconstruction.

Based on IFC estimates drawing on the RDNA2 results, the private sector could potentially cover a third of total needs; this investment would provide an essential complement to public investment given resource constraints. The 2023 IFC analysis suggests that enabling reforms to increase the scope for private participation in key sectors along with risk mitigation instruments and other support interventions could unlock major opportunities for private investment (domestic and foreign) and public-private partnerships (PPPs).[18] Encouragingly, investors have started to address priority needs, and

[17] Related to the following sectors: Telecommunication, Digital, and Media; Commerce and Industry; and Finance and Banking.
[18] See IFC, *Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine*, 2023, Link. This report found that, with enabling reforms, private investment could cover a third of total recovery and reconstruction needs (as assessed by the RDNA2 for the period February 2022–February 2023) or could cover about 18 percent without major changes in the policy/regulatory environment. The report also found that such reforms could unlock around US$283 billion in additional private investment opportunities to increase the competitiveness, resilience, and sustainability of Ukraine's economy.

projects are being prepared in several sectors that will contribute to reconstruction and future growth. To catalyze these efforts, the GoU has embarked on an ambitious reform program to lift regulatory obstacles, in coordination with international partners under the Ukraine Plan and Reform Matrix and has developed risk mitigation instruments and support programs.

Recovery and Reconstruction Priorities for 2025

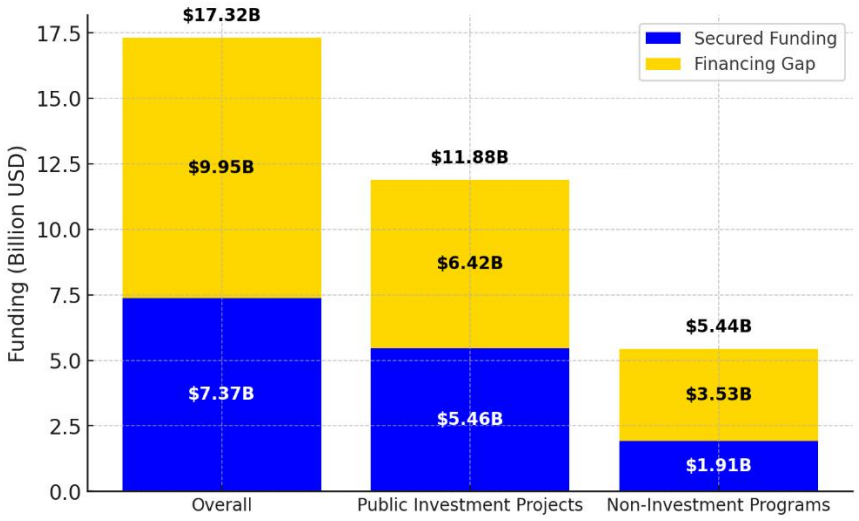
Ukraine's recovery investments are vital for its resilience and EU integration. Prioritizing investments in recovery and reconstruction is critical for Ukraine's journey toward long-term resilience. This should also go hand in hand with its strategic goal of EU accession, the structural reforms in the Ukraine Plan and with the reforms to align to the EU *acquis* as part of the ongoing accession negotiations. These efforts aim to rebuild the country's infrastructure, revive its economy, enhance its social conditions, and strengthen its institutional framework in alignment with EU standards. Recovery provides an opportunity not just to address the destruction caused by Russia's invasion of Ukraine but also to build back better by adopting innovative solutions and reforms that meet the expectations of EU membership. The integration of the PIM system in 2024 marks a significant milestone in Ukraine's reconstruction efforts, as it allows for a systematic, transparent, and evidence-based approach to prioritizing public investments. This system ensures alignment with national development goals, supports the efficient allocation of resources, and lays a strong foundation for sustainable development. Furthermore, these investments serve as a platform for addressing immediate needs while transforming Ukraine into a resilient, modern, and competitive economy.

The 2025 recovery and reconstruction priorities for Ukraine include public investment projects and non-investment programs totaling US$17.32 billion, with US$11.88 billion tagged as investment projects and US$5.44 billion for non-investment programs, with a total financing gap of US$9.96 billion. Both priority projects and programs are categorized in line with the nine sectoral priority areas. Public investment projects were identified using the evolving PIM system introduced in 2024, which regulated project identification, preparation, and prioritization at the central government level. The projects were consolidated into a SPP, approved by the Strategic Investment Council (SIC) chaired by the Prime Minister. Non-investment programs, such as housing compensation and demining, were prioritized by the Ministry for Development of Communities and Territories of Ukraine (MDCT) with input from line ministries and approved by the Cabinet of Ministers.

For public investment projects, US$5.46 billion of financing has been secured, leaving a gap of US$6.43 billion. The SPP includes 787 multi-year projects totaling US$61.7 billion, from which 304 projects were prioritized for 2025 with an estimated cost of US$11.88 billion (Figure 6). Of these, 92 projects received US$5.25 billion in funding from the State Budget, state guarantees, and International Financial Institutions (IFIs), while 16 projects secured US$0.21 billion from the recurrent budget and international grants but are not part of the public investment program. For non-investment programs, 44 priority programs totaling US$5.44 billion were identified, with 19 programs securing US$1.91 billion in funding from the budget and development partners, leaving a financing gap of US$3.53 billion for the remaining 25 programs. The prioritization process reflects the Government of Ukraine's commitment to addressing critical recovery needs while operating within the constraints of a realistic fiscal envelope. Key ministries involved in this effort include the Ministry of Finance (MoF), the Ministry of Economy (MoE), and the

MDCT, working collaboratively to ensure strategic, technical, and fiscal coherence. These prioritized projects and programs span nine key sectoral priority areas, including transport, energy, health care, education, and housing, all of which are essential to Ukraine's immediate recovery and long-term development goals.

Figure 6. Financing needs and secured funding for recovery and reconstruction investment projects and non-investment programs



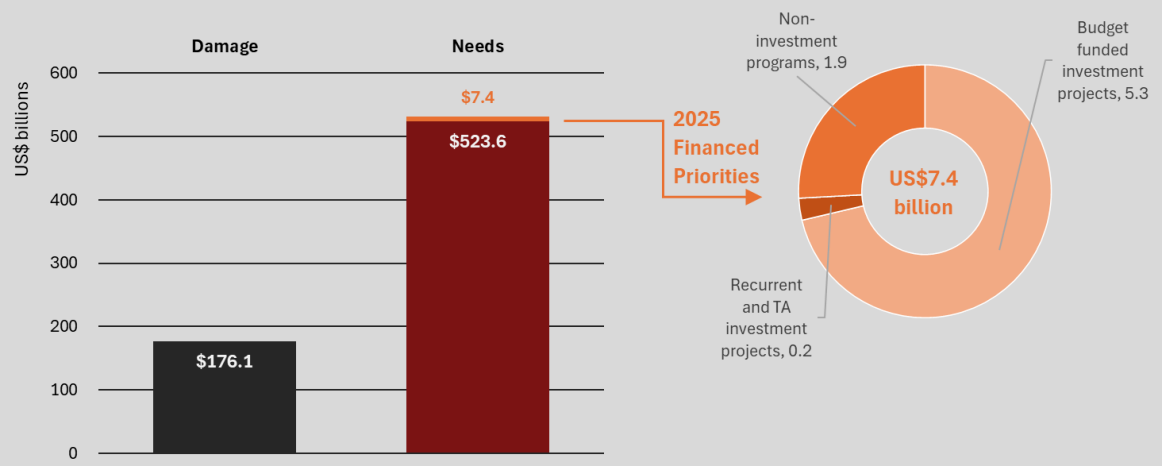
Source: Assessment team.

Private sector involvement is critical to bridging Ukraine's financing gap. The private sector plays an essential role in addressing Ukraine's recovery financing gap and driving sustainable economic growth. The GoU has prioritized reforms to enable greater private sector participation, including PPPs and investment incentives. Sectors such as energy, transport, and housing present significant opportunities for increased private sector involvement, particularly in areas like renewable energy generation, transport infrastructure concessions, and housing reconstruction. Additionally, the government's recently adopted state ownership policy, a reform under the Ukraine Plan, provide a framework for attracting private capital and enhancing market-based solutions. However, realizing this potential will require continued reforms to improve market access, strengthen institutional frameworks, and develop de-risking mechanisms that ensure projects remain viable and attractive to investors. These efforts must be complemented by capacity-building initiatives that enhance the ability of central and local governments to design and implement PPPs, thereby ensuring that private investment aligns with national recovery and development objectives.

Streamlining investments and strengthening the SPP will maximize impact. To maximize the impact of recovery and reconstruction investments, the GoU should focus on streamlining the prioritization process and enhancing the effectiveness of the SPP. A key recommendation is to strengthen strategic planning by ensuring that investment projects are rooted in sectoral and territorial strategic plans. This would improve alignment between project design and national priorities while addressing inefficiencies in resource allocation. Investments in project preparation are also critical to enhance the technical quality and readiness of projects; the Project Preparation Unit and Project Preparation Facilities play a

pivotal role in this regard. Building implementation capacity at both the central and subnational levels is also essential, with targeted technical assistance, training programs, and standardized digital tools to support project management. Enhancing local government capacity through decentralization initiatives will empower subnational governments to identify and address locally relevant priorities while ensuring alignment with national strategies. Finally, fostering private sector engagement through reforms and innovative financing mechanisms, such as green bonds and blended finance, will be critical in addressing substantial funding gaps and advancing Ukraine's recovery and reconstruction agenda. Figure 7 provides a visual summary of the damage, total needs, and 2025 financed priorities, with key data points covered in Table 1.

Figure 7. RDNA4 key results: Damage, needs, and 2025 financed priorities



Source: Assessment team.

Table 1. RDNA4 data snapshot

Overall	**US$176 billion** in direct damage
	US$524 billion in total needs considering 10 years
	US$17.32 billion of 2025 recovery and reconstruction priorities (public investment projects and programs), with US$7.4 billion secured, and a US$9.96 billion financing gap
Human impacts	**6.8 million** people displaced outside of Ukraine (UNHCR)
	4.6 million people internally displaced (GoU)
	35 percent of women-only households reported living below subsistence levels
	84.7 percent of families with three or more children are living in poverty
	10 percent of youth lost their housing in 2024 (twice the 2023 share)
	The National Police recorded **168,256** complaints of domestic violence as of October 31, 2024
	US$72.5 billion of potential cost implications of women's increased unpaid childcare work since February 2022
	6.1 million citizens are under threat of **explosive remnants of war**
Macroeconomic impacts	**US$39.3 billion** in external financing needs for 2025 (excluding flow relief from debt operations)
	2024 GDP is **78 percent** of 2021 GDP in real terms
	Poverty rose **1.7 times**, from 20.6 percent in 2021 to **35.5 percent** in 2023, per National Academy of Sciences
Social sectors	**13 percent** of the housing stock was damaged or destroyed, affecting **over 2.5 million households**

	Over **10 percent** of education infrastructure is damaged or destroyed
	1,603 health care facilities (16.2 percent) have been destroyed or damaged
	741,000 (20 percent) school-age children are studying in a hybrid format due to lack of bomb shelters, while over **443,000** (12 percent) are entirely remote due to Russia's invasion of Ukraine and safety concerns
	US$2.3 billion in social protection for internally displaced people and persons with disabilities
	200 social protection infrastructure assets have been damaged or destroyed
	5,483 cultural and tourism assets have been damaged or destroyed
Productive sectors	**40 percent** of settlements in Donetska and **18 percent** in Kharkivska faced "extreme" or "extreme+" levels of food security vulnerability in October 2024, up from 20 percent and 2 percent correspondingly in the summer
	Khersonska oblast alone needs **US$1.85 billion** for irrigation repairs. Other priorities: Odeska (49 percent of irrigation systems nonfunctional), Zaporizka (57 percent), Poltavska (83 percent), and Rivnenska (209 systems needing recovery)
	1 in 4 firms that reported damage have had more than 60 percent of assets damaged
	Credit losses are estimated at **25 percent** of the pre-invasion net loan portfolio
Infrastructure sectors	Over **US$2.5 billion** damage incurred by district heating
	US$72.3 billion in revenue losses in the energy sector, including **US$43.4 billion** for losses in the power sector alone
	Approximately **30 percent** of railway infrastructure remains in a "damage-repair" cycle
	US$977 million in damage to public facilities, spaces, and amenities; and **US$960 million** in damage to local mobility assets, including sidewalks and street lighting
	8.5 million people in need of essential water supply and sanitation services
	US$2.21 billion in damage to the private sector in the telecommunications, digital, and media sector
	12.2 percent of households have lost access to mobile services
Cross-cutting sectors	**14 percent** increase in damage to forests and natural landscapes in 12 months, reaching 698,845 ha
	34.4 percent increase in annual State Emergency Services responses since 2021, averaging 479,055 departures for interventions annually
	US$433 million in damage in justice and public administration infrastructure
	138,503 km² of area contaminated with explosive ordnances **US$29.8 billion** estimated for humanitarian mine action

Source: Assessment team. *Note:* Data as of December 31, 2024, unless stated otherwise. GDP = gross domestic product; GoU = Government of Ukraine; IDP = internally displaced person; L2UKR = World Bank's Listening to Ukraine surveys; UNHCR = UN High Commissioner for Refugees.

INTRODUCTION

2022 Invasion and its Trajectory

Since February 2022, the war has gone through varying phases of intensity (depicted in Figure 8). The civilian toll has been heavy. Since February 24, 2022, over 12,456 people have been killed, more than 28,000 have been injured, and millions have lost their homes.[19] According to statistics from the Government of Ukraine (GoU), as of January 18, 2025, 19,546 Ukrainian children had been deported and/or forcibly displaced to Russia.[20]

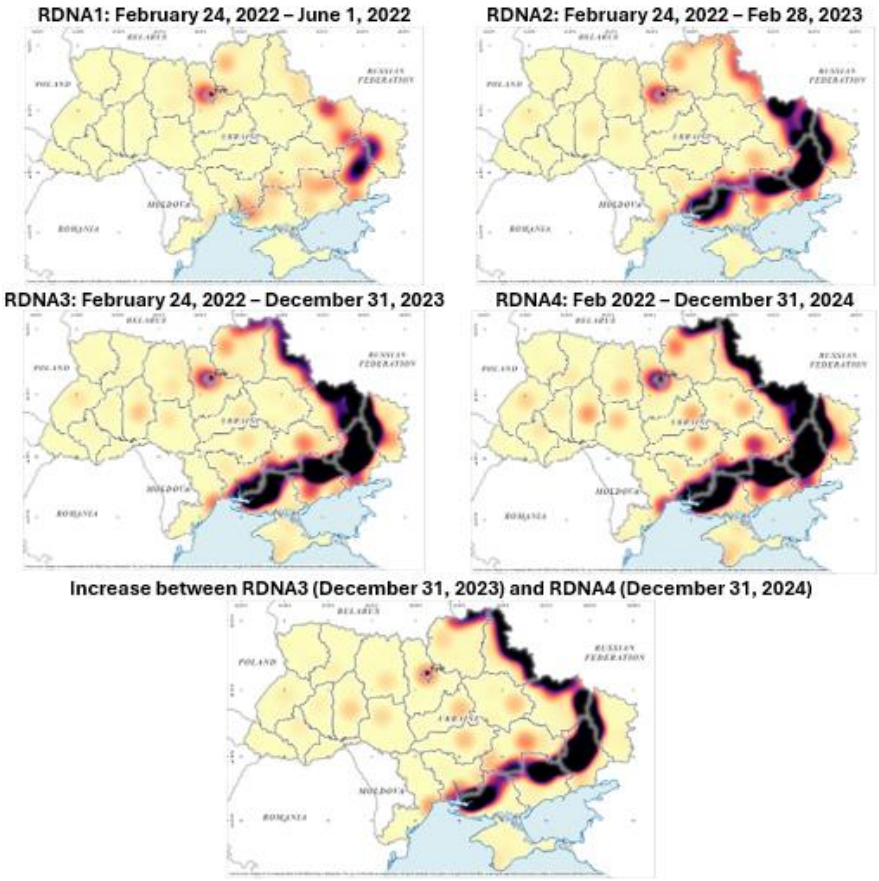
The early months brought destruction to several cities, municipalities, and regions, especially where the GoU temporarily lost control. Since April 2022, the GoU has brought more than half of this territory back under its control; and broadly from summer 2022 to the present, the main line of hostilities has not changed significantly. Missile and combat drone attacks on Ukrainian critical infrastructure, especially on energy infrastructure and housing, escalated in early October 2022 and continued through the autumn and winter of 2022/2023. Attacks were sustained across major cities and at least 16 Ukrainian regions, leaving millions of people without electricity, water, and/or heating.

During 2023, there were regular intense attacks on infrastructure mainly in the southeast, spanning many regions. The Kakhovka Dam breach and destruction of the hydroelectric power plant (HPP) in June 2023 led to extensive flooding that impacted 80 settlements across several regions. During the last months of 2023, attacks were carried out on ports, including in Odeska and Mykolaivska oblasts and along the Danube River, and attacks on infrastructure increased in intensity, particularly in the southeast. Air and combat drone attacks, as well as artillery assaults, extended beyond established battle zones, and continued to impact cities like Kyiv.

During 2024, hostilities escalated significantly, with air strikes along the frontlines as well as across Ukraine as a whole. Fighting intensified within the frontline zones, particularly in the east of Ukraine. In 2024, increased air strikes occurred in urban areas and against critical energy, transport, and other infrastructure facilities (see Figure 8).[21]

[19] Office of the High Commissioner for Human Rights (OHCHR), "Protection of Civilians in Armed Conflict—December 2024," January 7, 2025, Link. The actual figures are expected to be higher; however, the receipt of information from different locations in the country is challenging, and many reports are still pending verification.
[20] Of this number, 388 children have been returned. The number of missing children has increased. Since February 2022, 36,868 missing children have been found and 1,952 remain missing. GoU, Children of War website (accessed January 18, 2025), Link.
[21] Regular updates and data from the International Crisis Group, Ukraine, Link; and the ACLED Ukraine Conflict Monitor, Link.

Figure 8. Spatial evolution of Russia's invasion of Ukraine until December 31, 2024, and Ukraine RDNAs



Source: Assessment team. *Note*: Map is based on Armed Conflict Location and Event Data (ACLED), considering average monthly conflict events. For ACLED, see Clionadh Raleigh et al., "Introducing ACLED: Armed Conflict Location and Event Data," *Journal of Peace Research* 47, no. 5 (2010): 651–60, Link. Conflict events include battles and explosions/remote violence as classified by the ACLED methodology. RDNA = rapid damage and needs assessment.

Emergency and Humanitarian Response

Since February 2022, the GoU has continued to provide and coordinate humanitarian support to the affected regions and populations. Online humanitarian support platforms operated by state authorities and volunteers have been established to provide services, coordination, and support to Ukraine; they provide cash assistance and housing allowances for internally displaced persons (IDPs) and are an important source of sustenance.

As of December 2024, the EU, its member states, and financial institutions have provided various types of emergency and humanitarian support, including humanitarian, economic, political, financial, and military support as well as funding for Ukrainians in the EU.[22] Since February 2022, the EU and EU member states have mobilized over €3.7 billion for humanitarian assistance (including €950 million made available for Ukraine by the European Commission [EC]), including support for essential household items (such as food and water), health care (including mental health and psychosocial support), emergency and

[22] European Commission, "EU Solidarity with Ukraine," Link.

winterized shelter, protection (including education in emergencies), and cash assistance to help cover basic needs.[23] In addition, through the Union Civil Protection Mechanism (UCPM), the EU has delivered 153,488 tons of assistance to Ukraine, including items and equipment related to chemical, biological, radiological, and nuclear (CBRN) threats, shelter and shelter-related items (such as appliances, kitchen supplies, and bedding), specialized vehicles (including ambulances and fire trucks), equipment and training supporting humanitarian demining, and computers under the Laptops for Ukraine initiative. The EU has deployed a range of rescEU assets, including medical, CBRN, shelter, and energy stockpiles (hosted by EU member states) and assistance from the rescEU private sector reserve, and it has coordinated the medical evacuation of over 4,000 Ukrainian patients in urgent need of treatment. The UCPM logistic hubs in Poland, Romania, and Slovakia have played a crucial role supporting the delivery of this support.[24]

Since February 2022, the UN in partnership with the humanitarian community has scaled up its presence in Ukraine; it supported 15.8 million people in 2022 and 11 million people in 2023 through US$6.45 billion worth of assistance, including cash, emergency shelter and house repairs, food, medicine, generators, protection services, and winter supplies. In 2024, the Humanitarian Country Team reached over 8 million people with life-saving assistance,[25] particularly within frontline areas, through approximately US$2 billion worth of humanitarian funding from 39 UN member states and many private donors.[26] The UN development system implemented over US$815 million in investments in 2024 to support the government's early recovery efforts, focusing on community recovery investments in housing, energy, social infrastructure, humanitarian demining, local economic development, and mental health and psychological support. Investments also aimed to strengthen the capacity of national systems and community mobilization.[27]

Recovery and Reconstruction Efforts

The GoU is leading recovery and reconstruction efforts in relevant areas, having set up relevant institutional structures (see Figure 9). In May 2024, the Strategic Investment Council (SIC) was created. Chaired by the Prime Minister, the council helps coordinate executive authorities' actions related to harmonizing strategic priorities for public investments; and it helps prepare proposals for the Single Project Pipeline (SPP) for public investments. At its sixth meeting, the SIC adopted the main areas of recovery used to form investment priorities for 2025, specifically the social sphere (housing reconstruction, education and science, health care, social protection); infrastructure reconstruction (energy, in particular the protection of energy facilities, as well as transport, water supply, and sanitation); and demining and civil protection (in particular the development of shelters).

[23] An additional €76 million in humanitarian funding was made available to Moldova until 2024, from the initial request for assistance. An additional allocation of €140 million in humanitarian assistance to Ukraine and €8 million for Moldova has been made in 2025.
[24] Through the UCPM, additional support was provided to Moldova, Slovakia, North Macedonia, Poland, the Czechia, and Cyprus in 2022 and 2023 in response to requests for assistance with shelter, hygiene items, medicines and medical supplies, energy items, premade classrooms, and furniture.
[25] OCHA, "Ukraine: Humanitarian Response Dashboard (2024)," December 2024, Link.
[26] Financial Tracking System, "Ukraine Humanitarian Response Plan 2023, December 2024, Link.
[27] United Nations, "United Nations Recovery Programmes in Ukraine," December 2024, Link.

The GoU has adopted the Ukraine Plan under the ongoing Ukraine Facility.[28] The plan prepared by the GoU was endorsed by the EU in May 2024 and implementation is ongoing. The plan is an overarching program of reforms and investments for the period 2024–2027 encompassing most sectors of the Ukrainian economy, including transport, energy, green and digital transformation, human capital, and others. Most of the reforms under the Plan underpin Ukraine's effort in the EU accession process. The Plan also includes investments in areas such education, healthcare, business environment, transport, energy, or demining, including at the local level.[29] The Plan's development and implementation is coordinated by the Ministry of Economy of Ukraine (MoE) together with most other line ministries in the GoU, in cooperation with representatives of regional and local authorities, the private sector, experts, and think tanks. Additionally, the Ukraine Facility provides further support through the Ukrainian Investment Framework, deploying grants and guarantees to derisk private investment, and through extensive technical assistance.

In 2024, Ukraine's ambitious reform agenda was consolidated in the Reforms Matrix—an online "analytical tool for effective decision-making and management of reform progress."[30] The Reforms Matrix includes 325 conditionalities and recommendations, which correspond to 531 indicators to be implemented over the next 10 years. Priority areas include justice, fundamental rights and security, energy, financial services, and financial and budgetary aspects. Over the first three quarters of 2024, Ukraine had already met 199 indicators.

In 2023, the Ukraine Donor Platform was jointly launched by the GoU, the G7 countries, the EU, and international financial institutions to facilitate coordination of funding, the reform agenda, and private sector growth.[31] It has since expanded to include five additional members and nine observers. The platform meets regularly to coordinate the support for Ukraine's immediate financing needs and future economic recovery and reconstruction. As of December 2024, the Platform members, observers and participants had committed more than US$233 billion in economic support, including budgetary and recovery and reconstruction support. This includes the Extraordinary Revenue Acceleration (ERA) loan initiative that will make available approximately US$50 billion in financing to fund Ukraine's military, budget, and reconstruction needs. Concerning budgetary support, since February 2022 Ukraine has received over US$118 billion from platform members, observers, and participants.[32] A Business Advisory Council (BAC) was launched in 2024 to support the Platform's decision-making process by providing essential advice and expertise, business insights, and problem solving to promote improvements in Ukraine's investment climate to attract private sector investment.

The GoU is also advancing several reforms related to the construction sector, decentralization, energy efficiency, and public investment management (PIM). In December 2023, the GoU adopted a roadmap for the PIM reform that incorporates recommendations from the International Monetary Fund (IMF), the EC, and the World Bank. The roadmap introduced the target PIM system that will streamline and adapt

[28] Cabinet Of Ministers of Ukraine Order dated March 18, 2024, No. 244-rKyiv, "On the Approval of the Plan of Ukraine," Link.
[29] Ukraine Facility, "Ukraine Plan 2024–2027," Link. Decentralization and regional policy are considered part of sectoral reforms.
[30] See the Reforms Matrix website at Link.
[31] See the Ukraine Donor Platform website at Link.
[32] Ministry of Finance, "Joint Communiqué Following the Twelfth Meeting of the Ukraine Donor Platform Steering Committee. 14.01.2025," January 15, 2025, Link.

decision- making processes to the new challenges. The system will focus on prioritization, financial sustainability, effectiveness and efficiency, timeliness, environmental sustainability, inclusiveness and accessibility, transparency, and accountability. In 2024, the GoU adopted the action plan to implement the roadmap.[33]

Several institutional and policy reforms have been implemented to support the recovery and reconstruction process. The Ministry for Development of Communities and Territories of Ukraine (MDCT) facilitates coordination and efficient reconstruction of war-affected regions. To support a more systematic approach to planning the restoration of Ukraine, the position of Deputy Prime Minister for Restoration of Ukraine was established; the Minister in parallel heads the MDCT. The State Agency for Infrastructure Restoration and Development of Ukraine (the Agency for Restoration), through its territorial offices, is responsible for the largest infrastructure projects at the national level and supports and implements regional and local recovery projects based on the requests of the relevant project customers. The activities of the Agency for Restoration are coordinated by MDCT.

Territorial communities are responsible for developing planning documents, establishing communication with international partners, and implementing restoration projects in the respective territories. Their actions should be inclusive and should involve engaging and consulting with local civil society. Regional state administrations or regional military administrations can be authorized to implement recovery projects on behalf of territorial communities.

Figure 9. Schematic illustration of national and local level institutions engaged in recovery and reconstruction

Source: Assessment team.

[33] Decree of the Cabinet of Ministers of Ukraine dated June 18, 2024, No. 588-p, "Action Plan to Implement the Roadmap for Reforming Public Investment Management for 2024–2028," Link.

The EU is firmly committed to supporting Ukraine's recovery and reconstruction and is closely aligning this support with Ukraine's progress toward EU membership. Overall, the EU has provided around €130 billion in overall support to Ukraine and Ukrainians. As of March 2024, the EU has established a dedicated financing instrument of up to €50 billion to provide predictable and flexible support to Ukraine for the period 2024-2027 to support its recovery, reconstruction and modernization, in line with its EU path. In 2024, a total of €19.6 billion has been mobilized under all three pillars and €16.4 billion disbursed so far. As part of the Ukraine Investment Framework, the first €1.4 billion in grants and guarantee agreements were signed in June at the 2024 Ukraine Recovery Conference in Berlin to support Ukraine's recovery and attract private sector investments. They will notably focus on the repair, rehabilitation and development of energy and transport infrastructure, support municipalities, as well as enhance access to finance for small and medium-sized enterprises.

Since applying for EU membership in February 2022, Ukraine has made significant progress. The European Council decided to open accession negotiations in December 2023, and the first intergovernmental conference in June 2024 formally opened the negotiations with Ukraine. Bilateral screening meetings started in July 2024 and will continue until the fall of 2025, in view of opening negotiations on all the cluster of the EU *acquis*. To support Ukraine's recovery and reconstruction efforts, the Ukraine Facility entered into force in March 2024. The Facility allocates up to €50 billion for 2024–2027 to support macro-financial stability, modernization, and critical growth-enabling reforms that promote EU alignment, including support to the accession process, as well as Ukraine's recovery, reconstruction, and modernization, in part by catalyzing private sector investment.[34] At the core of the Ukraine Facility is the Ukraine Plan. Drawing also on the findings of RDNA3, the plan outlines key reforms and investments designed to drive sustainable economic growth, attract investment, and unlock Ukraine's growth potential over the medium to long term (see also Box 3). In addition, the Ukraine Investment Framework aims to mobilize €40 billion in investments and underscores the EU's commitment to Ukraine's recovery, resilience, and future integration into the EU.[35] Through these measures, the EC, and member states are supporting Ukraine in efforts to implement the Ukraine Plan and are helping Ukraine align to the EU *acquis*—both by making capital investments and by providing technical assistance.

Box 3. European Commission – Fulfilled reforms in 2024 under the Ukraine Plan

Energy and climate policies

The Integrated National Energy and Climate Plan, adopted in June 2024, is the central policy document for achieving climate neutrality in Ukraine including objectives for the reduction of GHG reductions by increasing the share of renewables, establishing carbon pricing mechanism and incentivizing energy savings in line with EU climate neutrality objectives.

The legislation on Wholesale Energy Market Integrity and Transparency (REMIT), which entered into force in January 2024, is a first step to improve the regulatory framework for the energy sector in Ukraine by increasing transparency in the market.

The legislation on first steps towards prevention, reduction, and control of industrial pollution, which entered into force in August 2024, paves the way for alignment with crucial environmental policies in the EU.

[34] European Commission, "Ukraine Facility," Link.
[35] European Commission, "Ukraine—Membership Status: Candidate Country," Link.

State-owned enterprises and public investments

The legislation on corporate governance of state-owned enterprises (SOEs), which entered into force in March 2024, contributes to a more efficient and transparent governance framework for SOEs by taking into account OECD guidelines and defining the power of the supervisory board.

Action plan on reforming the public investment management, adopted in June 2024, paving the way for strategic planning for public investment in close connection with budget planning as well as unified approaches for selection, evaluation and monitoring of investment projects.

Rule of law

Increased manpower for the Specialised Anti-Corruption Prosecutor's Office, as adopted in relevant budgetary laws in September 2024, contributes to the overall capacity of the anti-corruption infrastructure in Ukraine.

Source: Assessment of the first and second payment request by Ukraine under the Ukraine Plan.[36]

The UN in Ukraine leverages its large operational footprint (24 agencies and over 3,300 personnel across the country) to support communities in implementing recovery and reconstruction initiatives. In 2024 alone, the UN mobilized over US$815 million for recovery interventions in Ukraine. Communities are mobilizing, articulating their needs, and building their capacity to drive their own recovery. The UN has a strong focus on supporting the inclusion of marginalized groups and seeks to ensure that the recovery process benefits those farthest behind, reduces inequalities, and promotes social cohesion and livelihoods. In collaboration with the GoU and MDCT, the UN in Ukraine has established a flexible Ukraine Community Recovery Fund.[37] The fund supports communities—in particular in Sumska, Khersonska, and Mykolaivska regions—that are driving their own recovery efforts and seeking to reduce current and prevent future humanitarian needs; rebuild the social and economic fabric; and provide the conditions for people to voluntarily return to their homes and rebuild their lives. These community-focused early recovery efforts sit in the nexus of humanitarian, recovery, and social cohesion interventions.

Between February 2022 and December 2024, the World Bank, International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency (MIGA) mobilized around US$77 billion in financial support for Ukraine.[38] In December 2022, the World Bank set up the Ukraine Relief, Recovery, Reconstruction and Reform Trust Fund (URTF) to channel donor support.[39] The URTF provides a coordinated financing and support mechanism that helps the GoU sustain its administrative and service delivery capacity, conduct relief efforts, and plan and implement Ukraine's reconstruction and reform agenda. The projects financed by the URTF focus on repairing damaged infrastructure, restoring public services, and sustaining economic activities in the areas of health care, energy, logistics, agriculture, and housing. The trust fund also plays a critical role in Ukraine's path to reforms, as it supports activities that help implement reforms outlined in the Reforms Matrix. As of December 2024, URTF accumulated US$2

[36] Annex to the Council Implementing Decision with the assessment of the first payment request (Link) and the second payment request (Link).
[37] United Nations, "Ukraine Community Recovery," Link.
[38] It is noted that the World Bank Group does not provide separate figures on emergency response and recovery/reconstruction financing.
[39] World Bank, "Ukraine Relief, Recovery, Reconstruction and Reform Trust Fund (URTF)," Link.

billion in resources from 17 donor countries and was providing grants to support early recovery, administrative capacity of the government, and critical reforms.

In addition to the URTF, the World Bank Group offers a range of trust funds, financial intermediaries, guarantees, cofinancing and parallel financing, and other financial instruments to help the Government of Ukraine sustain essential public services, rebuild critical infrastructure, support the private sector, and meet the needs identified in the RDNAs. The World Bank's flagship financing instrument for Ukraine, the Public Expenditures for Administrative Capacity Endurance (PEACE) Project, enables international donors to provide support and is helping to sustain essential public service delivery. This ensures wages for teachers, first responders, and emergency services staff; provides social assistance for IDPs and the older persons; as well as support for advancing economic reforms for long-term resilience and growth and institution strengthening. The World Bank also supports preparation and implementation of framework projects in response to the emergency relief needs of Ukraine. The framework projects are designed to be scalable to absorb additional financing as it becomes available. The multisectoral support provided since February 2022 builds on a decades-long development partnership and sets the ground for resilient reconstruction when peace returns.[40] A list of ongoing World Bank–supported projects approved since February 2024 is in Box 4. As of December 2024, the IFC has financed US$1.4 billion while mobilizing an additional US$760 million, bringing total financing to US$2.2 billion.[41] MIGA has issued US$227 million in new guarantees in Ukraine.

Box 4. World Bank–supported projects approved in 2024

The First Growth Foundations Development Policy Operation, approved in March 2024, will support the authorities' efforts to (i) strengthen the economic policy framework to facilitate a structural shift towards sustainable growth; and (ii) enhance macro-financial stability to create a growth-conducive environment. The DPO funds are co-financed by two sources: US$984 million in IBRD lending backed by the Advancing Needed Credit Enhancement (ADVANCE) Ukraine Trust Fund, supported by Japan, and a US$516 million loan, guaranteed by the United Kingdom.

The Lifting Education Access and Resilience in Times of Need (LEARN) program, approved in August 2024, will invest a total of US$415 million to implement the New Ukrainian School – NUS reform. To this end, the program will improve overall safety conditions in schools, provide free transportation for vulnerable students, train teachers, purchase textbooks, and strengthen education sector management.

The Resilient, Inclusive, and Sustainable Enterprise (RISE) Program for Results, approved in October 2024, will improve the efficiency of state support to small and medium enterprises (SMEs) with a focus on green competitiveness.

The Ukraine Agriculture Recovery Inclusive Support Emergency (ARISE) Project, approved in October 2024, helps to maintain inclusive agricultural production and provide immediate and effective response to an eligible crisis or emergency.

The Supporting Reconstruction through Smart Fiscal Governance (SURGE) program, approved in November 2024, aims to assist the Government of Ukraine in improving its public investment management system at the central level and enhancing public financial management and fiscal governance at local and regional levels.

[40] World Bank, "The World Bank and Ukraine: Laying the Groundwork for Reconstruction in the Midst of War," November 30, 2023, Link.
[41] IFC, "IFC Launches $2 Billion Response Package to Support Ukrainian Private Sector," press release, December 15, 2022, Link.

The Transforming Healthcare through Reform and Investments in Efficiency (THRIVE) Project, approved in December 2024, aims to help the GoU improve the efficiency of public spending in the health sector amid financing constraints caused by the invasion.

The Second Growth Foundations Development Policy Operation, approved in December 2024, supports authorities' efforts to (i) strengthen the economic policy framework so as to facilitate a structural shift toward sustainable growth; and (ii) enhance macro-financial stability to create a growth-conducive environment. The DPO was supported by US$1 billion from the Facilitation of Resources to Invest in Strengthening Ukraine Financial Intermediary Fund (F.O.R.T.I.S. Ukraine FIF), US$567 million in IBRD lending backed by the ADVANCE Ukraine Trust Fund, supported by Japan, and US$484 million in IBRD lending, guaranteed by the UK**.**

Source: World Bank, "Financing Mobilized for Ukraine Since February 24, 2022," December 23, 2024, Link. The list of projects approved before December 2023 is provided in RDNA3.

RDNA4 Objectives and Methodology

The RDNA4 considers social, infrastructure, and productive sectors as well as cross-cutting sectors and issues. The RDNA4 assesses the impact during the period from February 24, 2022, to December 31, 2024. In doing so, it builds on the foundations and analytics of RDNA1, which covered the period between February 24 and June 1, 2022; the RDNA2, which covered the period between February 24, 2022, and February 24, 2023; and the RDNA3, which covered the period between February 24, 2022, and December 31, 2023 (see Box 4). The RDNA4 also takes into account important assessments, including the 2023 Kakhovka Dam Post-Disaster Needs Assessment (PDNA)[42] and several other analytics.[43]

Box 5. First, second, and third Ukraine Rapid Damage and Needs Assessments (RDNA1, RDNA2, RDNA3)

RDNA1 focused on the first three months of the invasion. It estimated **US$97 billion** in direct damage (covering the period between February 24 and June 1, 2022), **US$252 billion** in losses (which considered 21 months in total, comprising 3 months of actual and 18 months of projected losses), and **US$349 billion** in recovery and reconstruction needs (10 years). The most damage-affected sectors were housing (40 percent of total damage), transport (31 percent), and commerce and industry (10 percent). The most affected oblasts in terms of direct damage were Donetska, Luhanska, and Kharkivska, followed by Kyivska, Chernihivska, and Zaporizka.

RDNA2 focused on the first year since Russia's invasion of Ukraine. It estimated **US$134 billion** in direct damage (covering the period between February 24, 2022, and February 24, 2023), **US$289 billion** in losses (which considered 30 months in total, comprising 12 months of actual loss and 18 months of projected losses), and **US$411 billion** in recovery and reconstruction needs (10 years). The RDNA2 estimated implementation priorities for 2023 at around **US$14 billion,** or close to 3.5 percent of total needs identified. The most affected sectors were housing (38 percent),

[42] GoU and UN, "Post-Disaster Needs Assessment: 2023 Kakhovka Dam Disaster, Ukraine," 2023, Link.

[43] Please see RDNA3 for reports published as of February 2023. The following select reports were published in 2024: Kyiv School of Economics (KSE), "Report on Losses as a Result of Russia's Military Aggression against Ukraine," 2024, Link; KSE, "Report on Direct Infrastructure Damage from Destruction as a Result of Russia's Military Aggression against Ukraine as of Early 2024," 2024, Link; United Nations High Commissioner for Refugees (UNHCR), "Two-Year Update Protection of Civilians: Impact of Hostilities on Civilians Since 24 February 2022," 2024, Link; United Nations, "Attacks on Ukraine's Energy Infrastructure: Harm to the Civilian Population," 2024, Link; UNESCO, "Analysis of War Damage to the Ukrainian Science Sector and Its Consequences," 2024, Link; United Nations Development Programme (UNDP), "Impact of War on Youth in Ukraine–2024," 2024, Link; UNDP, "People's Needs in Ukraine amid Russian Full-Scale Invasion—Wave 3," 2024, Link; UNDP, "Assessment of the Impact of the War on Micro-, Small-, and Medium-sized Enterprises in Ukraine," 2024, Link; Ministry of Environmental Protection and Natural Resources, "Russia-Ukraine War: Environmental Impact," 2024, Link; Ministry of Education and Science, "War and Education. 2 Years of Full-Scale Invasion," Link.

transport (26 percent), energy (8 percent), commerce and industry (8 percent), and agriculture (6 percent). Donetska, Kharkivska, Luhanska, Zaporizka, Kyivska, and Khersonska oblasts sustained the greatest direct damage.

RDNA3 focused on almost two years since the invasion. It estimated **US$152 billion** in direct damage (between February 24, 2022, and December 31, 2023), **US$499** billion in losses (which considered 40 months in total, comprising 22 months of actual losses and 18 months of projected losses), and **US$486** billion in recovery and reconstruction needs (over 10 years). The most affected sectors were housing (37 percent), transport (22 percent), commerce and industry (10 percent), energy (7 percent), and agriculture (7 percent). Across sectors, Donetska, Kharkivska, Luhanska, Zaporizka, Khersonska, and Kyivska oblasts sustained the greatest damage. RDNA3 also included priorities for 2024 as identified by the line ministries (estimated at **US$15 billion**).

Sources: World Bank, GoU, and EC, "Ukraine Rapid Damage and Needs Assessment," 2022, Link; World Bank, GoU, EC, and UN, "Ukraine Rapid Damage and Needs Assessment: February 2022–February 2023," March 2023, Link; World Bank, GoU, EC, and UN, "Third Ukraine Rapid Damage and Needs Assessment: February 2022–December 2023," February 2024, Link.

The RDNA4 follows a globally established and recognized PDNA methodology jointly developed by the World Bank, the EU, and the United Nations. This approach has been applied globally in post-disaster and war contexts to inform recovery and reconstruction planning. The report uses standard terminology; key terms are highlighted in Box 6. The use of the global approach and standard terminology facilitates any future assessments. An integral part of the assessment across all sectors is the understanding of the direct and indirect damage, the losses, and the human impacts; application of the build back better (BBB) approach; and use of principles of green, resilient, inclusive, and sustainable recovery and reconstruction in estimating needs. The RDNA4 estimated the total needs for 10 years; and unlike in the RDNA3, mid-term needs were not assessed. Where information was available, recovery and reconstruction needs that have been already met were deducted from the total needs estimates. The regions are organized according to groupings presented by the GoU in 2022, updated based on the current situation. Frontline regions are areas temporarily not under government control and/or areas of active fighting; support regions are those providing logistics for defense and humanitarian cargo; backline regions are those protecting export/import logistics hubs and evacuated enterprises; and regions where the government has regained control are areas recovering from sustained damage.

It is important to note that the exchange rate used in RDNA4 is different from that in RDNA3.[44] The RDNA4 report uses the exchange rate as of December 31, 2024, of US$1 = UAH 42.039, reflecting depreciation of the hryvnia. The RDNA3 report used the exchange rate of US$1 = UAH 36.5686. The RDNA4 exchange rate is applied across all calculations for the period between February 24, 2022, and December 31, 2024, in those sectors where unit costs were in hryvnia.

Like previous RDNAs, the RDNA4 also describes the impact of the invasion on people's lives. This analysis follows specific vulnerable groups. The RDNA4 follows the groups and topics covered in RDNA3 (displaced persons and returnees, persons with disabilities, war veterans and their families, and gender-specific impacts; youth and child protection and rights; and older persons). The human impact chapter also describes a broader set of needs and priorities that cut across sectors and that can improve people's lives

[44] RDNA2 and RDNA3 used the exchange rate of US$1 = UAH 36.5686 as of February 28, 2023, and December 31, 2023, respectively, while RDNA1 used US$1 = UAH 27.28 from December 21, 2021.

as the fighting continues. Addressing this set of needs and priorities will also contribute toward more socially inclusive development for Ukraine beyond the immediate response. It should be noted that in addition to the group-specific issues assessed, there are population-wide human impacts felt by everyone in Ukraine, as mentioned across sectoral chapters in the report.

While focusing on war-related impacts and needs, the RDNA4 contributes to and complements other ongoing efforts related to Ukraine's reconstruction, modernization, and integration into the European community. The principles of BBB – including improvement of standards and innovation - are aligned with the vision and investments set by the Ukraine Facility, which supports Ukraine's reform agenda as the country moves toward alignment with EU policies and prepares it to join the EU. Results of the RDNA4 can also inform and complement other sector-specific analytics as well as ongoing efforts by the GoU and partners to identify key reforms, medium-term economic growth opportunities, and opportunities for private sector engagement.

Building on the analysis of 2024 priorities in RDNA3 and complementary to the needs estimation, the RDNA4 also includes short-term priorities identified for 2025. These priorities, critical for recovery and reconstruction, were determined through the Government of Ukraine's PIM system and comprise all public investment projects in the 2025 State Budget. Additional projects with secured funding from the recurrent budget and international technical assistance grants, were also included in the 2025 priorities. The 2025 priorities also incorporated non-investment programs, that were outside the public investment program but are urgent recovery and reconstruction needs for 2025. These non-investment priorities were identified in an independent process led by MDCT, in line with the nine sectoral priority areas for recovery and reconstruction approved by the SIC. This marks a significant improvement over previous RDNA processes, which relied on bottom-up project selection without sectoral prioritization or adherence to a constrained fiscal framework.

The RDNA4 faced several constraints and relied on several specific assumptions. The sector assessments were produced in a short time frame with sometimes significant limitations related to data availability (e.g., for data related to the private sector, certain geographic areas, or comprehensive information on recovery and reconstruction needs met) and data sensitivity (such as for critical energy infrastructure). Field verification was not possible. To ensure the relevance of the estimations, substantial efforts have been made to improve the accuracy of the information that was collected, analyzed, and verified. The RDNA4 does not provide asset-level information and instead provides portfolio-level information at the level of oblast. Damage to asset types considers three levels: fully destroyed, damaged, and no/minor damage. Since loss is typically measured until "normality" is restored, the calculation includes in total 52 months, comprising 34 months between February 24, 2022, and December 31, 2024, as well as an additional 18 months. The geographic scope includes all areas under government control on February 1, 2022. An important limitation is that the total needs and priorities are presented at sector level and do not balance one sector's needs against another's. Like previous RDNAs, the RDNA4 is not intended for legal or compensatory claims. While the assessment considers human impacts, there continue to be gaps, and the report can serve as the basis for further analysis. Future analyses may also focus in more depth on the reform and growth agenda—for example, may consider different types of reforms depending on the war trajectory, priorities, and expected outcomes, or may consider areas with limited or no fighting

where reduced investment has led to deterioration of infrastructure and services and therefore increased investment needs.

Box 6. RDNA4 definitions

Damage: Direct costs of destroyed or damaged physical assets and infrastructure, valued in monetary terms. Costs are estimated based on replacing or repairing physical assets and infrastructure, considering the replacement price prevailing before February 2022. The data cutoff for RDNA4 was December 31, 2024.

Loss: Changes in economic flows resulting from the invasion, valued in monetary terms. Examples include increased operating costs and loss of revenue for authorities/private sector.

Needs: Value associated with the resumption of prewar normality through activities such as repair and restoration, including a premium linked to build back better principles—e.g., improved energy efficiency, modernization efforts, and sustainability standards—as well as factors such as global inflation, surge pricing due to volume of construction, higher insurance, and so forth. Needs are expressed in monetary terms according to market prices prevailing as of December 31, 2024. Needs do not equal the sum of damage and losses. Needs met were discounted as relevant.

Build back better: Relates to improvements integrated into rehabilitation and reconstruction of damaged assets, including improved functionality, energy efficiency, universal access, disaster and climate resilience (greening, decarbonization), and critical modernization measures, such as right-sizing and right-siting of infrastructure and services. This costing is added in the needs calculation, and each sector uses appropriate standards and costing assumptions.

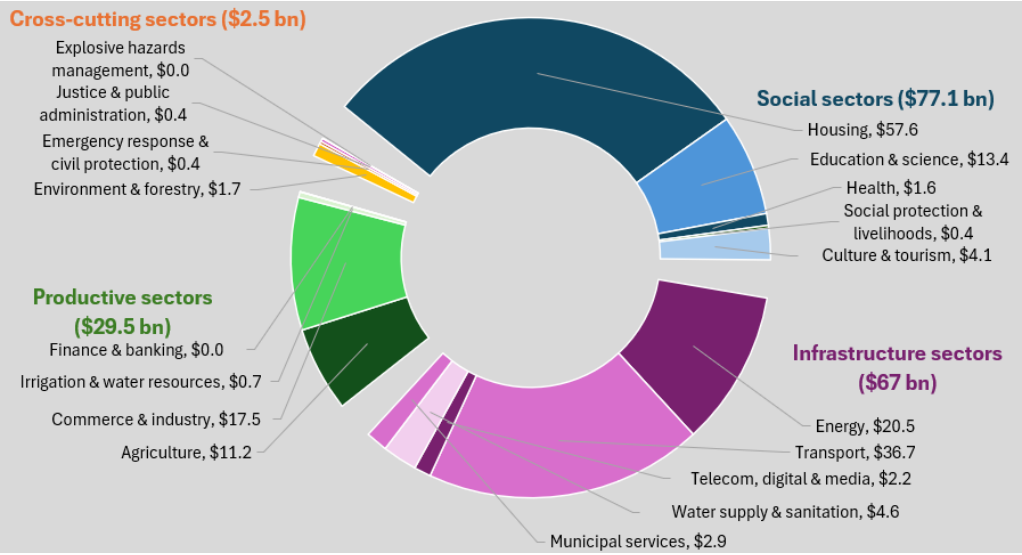
Recovery and reconstruction priorities for 2025: Refers to priority investment projects and non-investment programs. Priority investments were identified through the PIM system introduced by the GoU in 2024. The PIM system, in its pilot phase, regulates the identification, preparation, and prioritization of public investment projects at the central government level, consolidating them into a SPP approved by the SIC, chaired by the Prime Minister. Non-investment priority programs, such as housing compensation and demining, followed a prioritization process led by the MDCT, with input from line ministries and approval by the Cabinet of Ministers.

SUMMARY OF IMPACTS AND NEEDS

Summary of Damage

The direct damage as a result of the invasion is immense. The total direct damage to buildings and infrastructure across sectors is estimated at approximately US$176 billion (Table 2, Figure 10). The most affected sectors have been housing (about US$57 billion, or 33 percent of total damage), transport (about US$37 billion, or 21 percent), energy and extractives (over US$20 billion, or 12 percent), and commerce and industry (over US$17 billion, or 10 percent). Other sectors with high levels of damage include education and science (over US$13 billion, or 8 percent) and agriculture (over US$11 billion, or 6 percent). The frontline oblasts of Donetska, Kharkivska, Luhanska, Zaporizka, and Khersonska have sustained the greatest damage, summing to about US$116 billion, or 66 percent of total damage (Table 3). Kyivska oblast and Kyiv City sustained also significant accumulative damage totaling US$16 billion.

Figure 10. Total damage (US$ billion): US$176 billion



Source: Assessment team. *Note*: Values are for the period between February 24, 2022, and December 31, 2024.

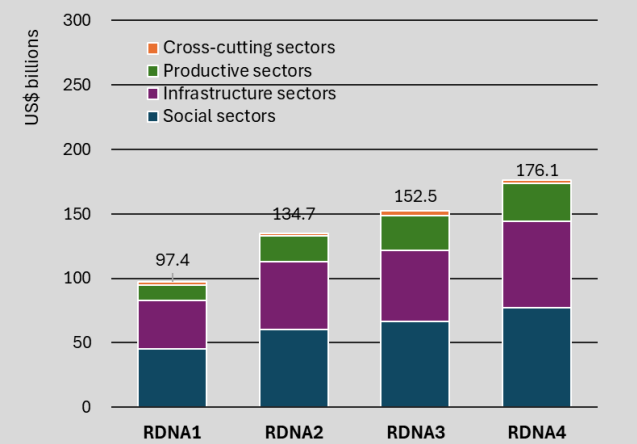
On average, across assessed sectors, the direct damage has increased by almost US$24 billion (or 15.5 percent) compared to RDNA3 (US$152 billion) (Figure 16).[45] A stark increase is noted in the energy sector, where a significant scale-up of attacks resulted in a 93 percent increase in damage to assets, including power generation, transmission, and distribution infrastructure, although some of this increase is also related to re-classification of district heating from municipal to the energy and extractives sector. The housing sector has seen a 3 percent increase in damage. According to the current assessment, 13 percent of the total housing stock has been damaged or destroyed, affecting more than 2.5 million households. Other critical infrastructure sectors have continued to sustain significant damage, with damage to water supply and sanitation assets increasing by 16 percent since RDNA3, and damage to transport assets increasing by about 9 percent. Damage in commerce and industry increased by almost

[45] Because RDNA4 uses a different exchange rate from that in RDNA3, the changes between RDNA3 and RDNA4 are more significant than the absolute numbers show. Damage reported under RDNA1 and RDNA2 is not double counted under RDNA4.

12 percent. Across all sectors, Donetska oblast, Kyiv City, Odeska and Kharkivska regions recorded highest positive net change in damage.

Most sectors are recording increases in damage: in the majority of sectors, damage increased by between 5 percent and 20 percent relative to RDNA3 (Figure 11, Table 4). In several sectors, the change in damage is more substantial—with both increases and decreases recorded. Sectors with the most notable increase in damage include education and science (141 percent), energy and extractives (94 percent), social protection (81 percent), and governance and public administration (26 percent). Reductions in damage were recorded in environment, natural resource management, and forestry (-47 percent), municipal services (-41 percent), and emergency response and civil protection (-5 percent). Several factors explain these changes; most significantly, the large increase in damage in sectors like energy and extractives reflects accelerated destruction through intensified attacks on critical public infrastructure assets. Reductions in damage are most often explained by a change in methodology (e.g., district heating is now assessed as part of the energy sector rather than municipal services), or by the availability of granular data that improve the accuracy of estimates (e.g., in the education and science sector). In the environment, natural resource management, and forestry sector, damage was reduced from RDNA3 by 47 percent due largely to a downward revision of the estimated area of burned and inaccessible forests.[46]

Figure 11. Comparison of damage in RDNA1, RDNA2, RDNA3, and RDNA4 (US$ billion)



Source: Assessment team. *Note*: y axis = US$ billion. RDNA1 damage covers the period between February 24, 202,2 and June 1, 2022. RDNA2 damage covers the period between February 24, 2022, and February 24, 2023. RDNA3 damage covers the period between February 24, 2022, and December 31, 2023. RDNA4 damage covers the period between February 24, 2022, and December 31, 2024.

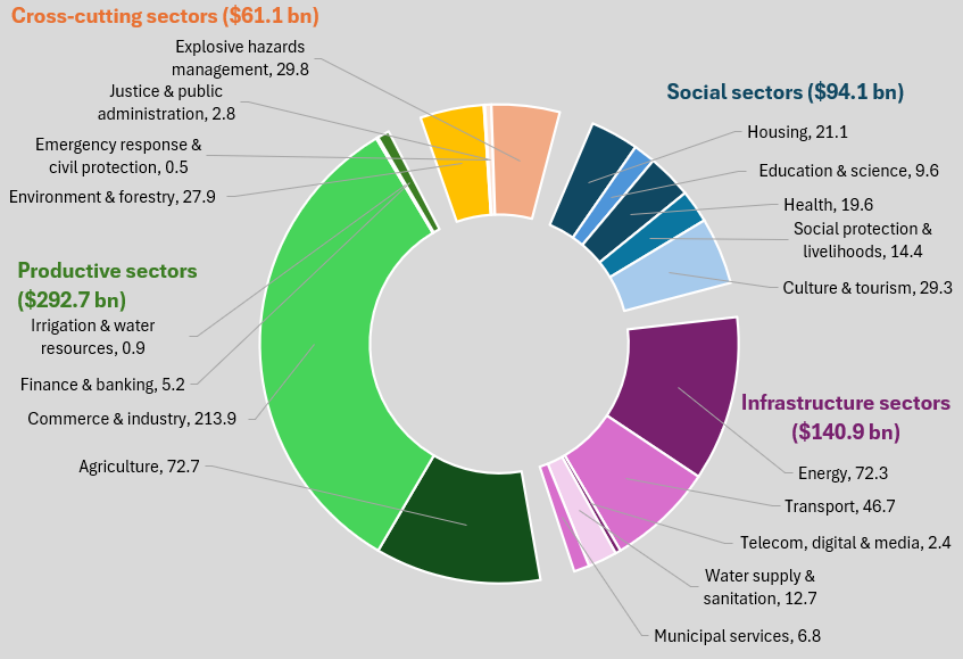
Summary of Loss

Aggregate economic, social, and other monetary losses total about US$589 billion, significantly exceeding asset damage (Table 2, Figure 12). Loss is dominated by commerce and industry (about US$214 billion, or 36 percent of the total loss), and to a lesser degree by agriculture (US$73 billion, or 12 percent), energy and extractives (US$72 billion, or 12 percent), transport (US$47 billion, 8 percent), and explosive hazards management (US$30 billion, or 5 percent). It should be noted that losses in one sector

[46] It is noted that direct damage from Kakhovka dam is included in the Irrigation and Water Resources sectoral assessment.

can intersect with those in other sectors, though careful efforts have been made to avoid double-counting. For example, reduction in agricultural production affects transportation needs, and loss of electricity affects commerce and industry in areas that are otherwise unaffected. In line with previous RDNAs, the total loss figures in the RDNA4 do not include household income loss—estimated under the social protection and livelihoods sector and valued at over US$73 billion—to avoid potential double-counting in relation to other sectors.

Figure 12. Total loss (US$ billion): US$589 billion



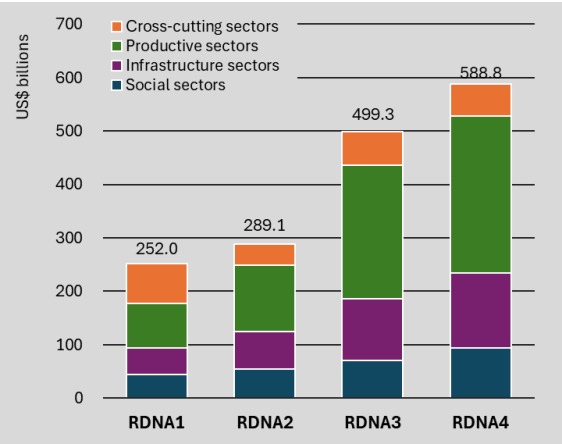
Source: Assessment team. *Note*: Loss includes 34 months between February 24, 2022, and December 31, 2024, as well as an additional 18 months. Loss in social protection excludes US$73 billion in estimated loss of household incomes to avoid potential double-counting.

RDNA4 loss results show a marked increase over RDNA3 loss results (US$499 billion) averaging 18 percent across all sectors (Figure 16). As was the case for damage, the increased losses in several sectors are linked to specific events, including extensive attacks on energy infrastructure, which in turn affected operations across many other sectors. The largest net increase in loss is recorded is in commerce and industry (by US$41 billion), and the energy and extractives sector (over US$18 billion). Other sectors recording increased losses include justice and public administration (68 percent), social protection and livelihoods (52 percent), culture and tourism (49 percent), and education and science (40 percent). While damage is concentrated in frontline oblasts, losses are distributed across the whole country. Losses in frontline oblasts of Donetska, Kharkivska, Luhanska, Zaporizka Khersonska, Mykolaivska amount to US$182 billion (or 31 percent of the national total). The capital, Kyiv, along with Kyivska oblast together account for US$131 billion in losses (or 20 percent of total losses). The most pronounced net increases in losses compared with RDNA3 are in Zaporizka (US$30.8 billion), Kyivska (US$14.5 billion), and Dnipropetrovska (US$14.1 billion).

In some sectors, the increase is the result of improved data and/or ability to consider additional loss categories. In the culture and tourism sector, the availability of real sales data for 2022 and 2023 showed for the first time the scale of the impact on the economic activity in this sector. Underreported in RDNA3 due to data limitations, losses in the sector increased from US$19.6 billion (RDNA3) to US$29.3 billion (RDNA4) (Figure 13, Table 4). Losses were captured in areas such as hospitality, tourism, arts, entertainment, and information technology (IT) (avoiding double-counting with the digital, telecommunications, and media sector). A similar pattern characterizes the commerce and industry sector, where losses increased from US$173 billion (RDNA3) to US$214 billion (RDNA4) as a result of updated sales records. Losses in the justice and public administration sector—up by 68 percent since RDNA3—are similarly driven by improved data that enable the estimation of impacts across a wider set of institutions.

Loss is not necessarily proportional to damage as it comprises several categories, including disruption of the production of goods and/or services and access to goods and/or services, disruption to governance, and increased risks as well as vulnerabilities. For example, while no substantial damage was recorded in the IT sector, the sectoral losses are estimated at about US$11.5 billion linked to a reduction in sales and value added. Similarly, in agriculture, damage to farm equipment can be relatively low, while loss to crops can be still high; in commerce, damage to commerce and industry buildings can be low, but the sales drop can be still significant. For example, Dnipro was a major industrial center contributing to 14.7 percent of national sales before February 2022; hence damage disproportionately affected sales, and losses in turn. Household income losses—estimated to be around US$73 billion, as indicated above—are excluded from the overall loss account in RDNA4 to avoid double-counting; but they provide an indication of the demand-side impacts since February 2022 that affect the demand for goods and services.

Figure 13. Comparison of losses in RDNA1, RDNA2, RDNA3, and RDNA4 (US$ billion)



Source: Assessment team. *Note*: Loss in RDNA1 considers 21 months in total—3 months between March and June 2022, and an additional 18 months. Loss in RDNA2 considers 30 months in total—12 months between February 24, 2022, and February 24, 2023, and an additional 18 months. Loss in RDNA3 considers 40 months in total—22 months between February 24, 2022, and December 31, 2023, and an additional 18 months. Loss in RDNA4 considers 52 months, which includes 34 months between February 24, 2022, and December 31, 2025, and an additional 18 months.

Summary of Social and Macroeconomic Impacts

Human development impacts continue to be deep and wide-ranging. From February 2022 until end-December 2024, almost 12,456 civilians lost their lives and 28,000 were injured.[47] Since then, 13.5 million people—approximately one-third of the population of Ukraine—were forcibly displaced. As of December 2024, 4,642,735 people were officially registered as IDPs with the government. Livelihoods and living conditions continue to deteriorate in Ukraine; access to basic services is severely disrupted, and different societal groups experience different sets of adverse impacts. While overall poverty levels[48] have increased slightly, there are significant geographical disparities, and rates are likely much higher in regions currently not under government control. Young people face significant learning losses due to inadequate support in formal education and a lack of psychological services for rising mental health issues. Older persons continue to disproportionately face impoverishment, housing vulnerability, and security risks because they are less likely than others to evacuate their homes. The number of people with disabilities has increased significantly as a result of trauma and serious injuries. IDPs and the growing number of returnees face heightened socioeconomic challenges, including a tightening of cash assistance programs, a limited stock of adequate and affordable housing, and limited access to early childhood education, social services, and stable and secure employment. Vulnerable groups like female-headed IDP households with children, as well as young people, persons with disabilities are especially impacted; these groups face higher rates of poverty and food insecurity as well as limited access to essential services. Gender-based violence (GBV), including conflict-related sexual violence (CRSV) and human trafficking, have increased, overwhelming survivor services. The increasing number of war veterans and their dependent families have pressing needs for material assistance, housing, employment, and retraining, as well as rehabilitation from injury.

The invasion has caused economic disruption, job loss, and low investor confidence, which affect public and private financing. However, after a 28.8 percent gross domestic product (GDP) contraction in 2022, Ukraine's economy has demonstrated resilience and posted 5.5 percent growth in 2023, supported by a good harvest and the gradual removal of logistical bottlenecks. The reopening of the Black Sea corridor in late 2023 facilitated better capacity utilization in metals and mining and reduced the output gap. Economic growth remained at 5 percent in the first half of 2024. However, attacks on energy infrastructure, which intensified in May 2024, led to energy shortages and disrupted economic activities in the second half of the year. Thanks to government efforts to rapidly repair energy infrastructure and to increase electricity imports, an economic contraction was avoided, but GDP growth slowed to 2 percent year-over-year in Q3 2024, with full-year GDP growth estimated at 3.5 percent. In 2024, Ukraine had fiscal financing needs to cover its fiscal deficit and debt repayments amounting to US$57.5 billion. With defense spending continuing to drive this fiscal deficit, external concessional loans remain the main

[47] Office of the High Commissioner for Human Rights (OHCHR), "Protection of Civilians in Armed Conflict—December 2024," January 7, 2024, Link. The actual figures are certainly even higher; however, the receipt of reports is a challenge under current circumstances, and many are still pending verification.

[48] Poverty rates calculated using different methodologies are not comparable. In RDNA2, 2021 and 2022 poverty rates were estimated based on World Bank global methodology using the Upper-Middle-Income Class (UMIC) poverty line ($6.85/day 2017 purchasing power poverty). 2022 poverty rates are projections, due to the lack of data. RDNA3 reported group-specific poverty rates computed by UNICEF. The RDNA4 poverty rates following the national poverty methodology using the "Actual Minimum Subsistence" poverty line of UAH 6,166 in 2023."

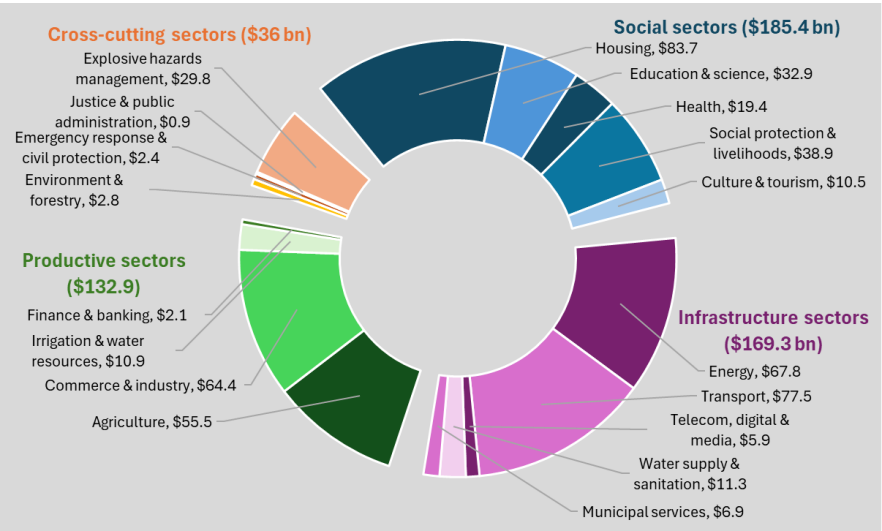
mechanism used to cover fiscal financing needs (including US$41.7 billion in grants and concessional loans from international partners in 2024).

Summary of Needs

The total estimated recovery and reconstruction needs across the public and private sector amount to about US$524 billion (Table 2, Figure 14). These costs—estimated for a period of 10 years—consider building back better (BBB) principles, including a shift toward lower energy intensity and adoption of modern standards (including for climate resilience and inclusive design), as well as inflation, market conditions, surge pricing in construction commonly seen in areas of major construction, and higher insurance premiums. It is noted that the BBB cost increase is set based on sectoral context and assumptions.

The highest estimated needs are in housing (almost US$84 billion, or 16 percent of the total). This is followed by transport (almost US$78 billion, or 15 percent), energy and extractives (almost US$68 billion, or 13 percent), commerce and industry (over US$64 billion, or 12 percent), agriculture (over US$55 billion, or 11 percent), social protection and livelihoods (US$39 billion, or 7 percent), and explosive hazards management (almost US$30 billion, or 6 percent). Across all sectors, the cost of debris clearance and management (and demolition where needed) reaches around US$13 billion. Data on needs met have been reported by eight sectors: housing (US$5 billion); education and science (US$528 million); agriculture (US$873 million); telecommunications, digital, and media (US$116 million); commerce and industry (US$3.1 billion); finance and banking (US$3.1 billion); emergency response and civil protection (US$478 million); and justice and public administration (US$8 million). Needs met in all these sectors collectively total over US$13 billion, including both public and private contribution. However, sectors note data limitations and lack of comprehensive and robust data in this area.

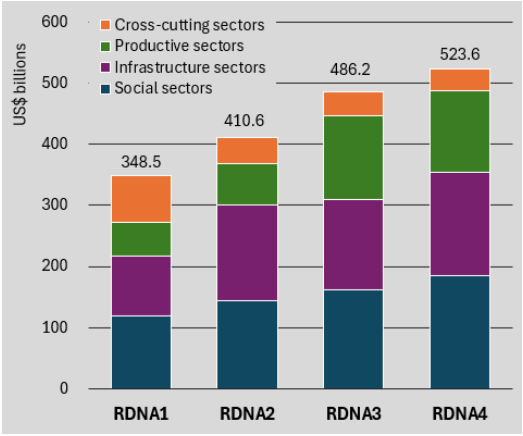
Figure 14. Total recovery and reconstruction needs (US$ billion): US$524 billion



Source: Assessment team. *Note*: Needs relate to total estimated needs covering the period of 10 year from 2025 up to 2035. Where data were available, needs met were deducted.

Between RDNA3, when needs were around US$486 billion (Table 4), and RDNA4, needs increased by over US$37 billion (7.7 percent), concentrated in several key sectors (Figure 15, Figure 16). Additional needs in the energy and extractives sector (almost US$21 billion) and the education and science sector (US$19 billion) together account for the bulk of the increase. To a large extent, the increase was driven by the substantial damage sustained by these sectors in 2024. The overall trends related to the needs are similar to damage and loss trends, as well as other contributing factors as described above. The regions with the greatest positive net change in needs include Zaporizka, Kharkivska, Donetska, and Odeska.

Figure 15. Comparison of needs in RDNA1, RDNA2, RDNA3, and RDNA4 (US$ billion)



Source: Assessment team. *Note*: Needs are counted within a period of 10 years for respective RDNAs.

Engaging the Private Sector in Meeting Long-Term Needs

The critical role of private sector investments in meeting needs and reducing the burden on the public authorities should be noted. Based on data from the RDNA2, which covered the period February 2022–February 2023, IFC estimated that the private sector could finance a third of total reconstruction needs, provided enabling reforms were implemented.[49] It also found that such reforms could unlock additional private investment ranging from US$99 billion to US$282 billion (in constant 2023 prices) to increase the competitiveness, resilience, and sustainability of Ukraine's economy; these investments could support Ukraine's economic growth but would not be directly be related to reconstruction.

Private investment will be more easily attracted to commercial sectors (agriculture, commerce and industry, banking) in the current policy environment. However, an accelerated agenda of pro-competition reforms and deeper integration with the EU and international markets could significantly increase the private sector's role in reconstruction, especially in infrastructure sectors, while also creating additional investment opportunities beyond direct reconstruction needs identified in RDNAs. Reforms would also open opportunities for private financing in social infrastructure sectors (water and sanitation, health, education). Updating the PPP framework will be critical for realizing these opportunities.

While this analysis was not replicated for RDNA4, similar ratios on private-sector contribution as noted above could be assumed. Importantly, the share of private financing of reconstruction needs in each

[49] See IFC, *Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine,* 2023, Link.

sector will depend on Ukraine's continuing to carry out critical structural reforms, including those aligned with the Ukraine Plan, and establishing the right framework conditions and investors to allow the private sector to invest, including developing mechanisms to develop new financing sources, adequate instruments to address different types of risks (e.g., political and country risk, execution risk, macroeconomic risk, commercial risk) and targeted business support programs. Such reforms and interventions could also be expected to stimulate foreign direct investment.

Despite challenges, the GoU has sharpened the focus on reforms in line with its development goal centered on EU accession and the Ukraine Plan. Some notable reforms have helped unlock private sector opportunities; these include the adoption of the law on improving corporate governance of state-owned enterprises (SOEs) (February 2024), the law on privatization of state-owned banks (September 2024), and the state ownership policy (November 2024), a key document for corporate governance of SOEs designed to enhance state asset management. In the energy sector, which is critical for Ukraine's reconstruction and offers some of the most significant private sector opportunities, the pace of reform has accelerated with efforts to decentralize Ukraine's energy matrix, align it with EU rules and standards, and bolster renewable energy generation. A milestone was reached with the adoption of the Regulation on Wholesale Energy Market Integrity and Transparency Law in June 2023, which transposes EU regulations on wholesale energy market integrity and transparency into Ukraine's legal framework. The adoption of the National Energy and Climate Plan in June 2024 was another important step in harmonizing with the EU; it increases resilience and supports Ukraine's green energy and industry transition, which has become essential to compete in European markets.

In addition to policy reforms, other government interventions, including financing and de-risking instruments and direct support to firms, will be needed to maximize private investment for recovery and reconstruction. Government-backed incentives, subsidies, and/or infrastructure development can lower barriers to entry and otherwise reduce risk for businesses, while accelerating the adoption of climate-smart technologies. In this regard, the government has introduced or ramped up several such initiatives with support from development partners, including programs to attract large investment projects, encourage the development of industrial parks, foster entrepreneurship, etc. If designed adequately to ensure the efficient use of scarce public resources and minimize market distortions, this kind of intervention can play an important role as a catalyst.

Support for the private sector remains a key priority for the GoU, as its recovery is essential for long-term economic stability and growth. In 2025, according to the MoE, an additional US$8 billion would be needed to finance private sector initiatives, including grants and support of affordable interest rates loans for business, war insurance and risk coverage for the new investments, support for capital investments, business development and new investment projects, innovations, and other incentives for business. Ensuring adequate financing, in line with international good practices and pro-competitive principles, for private sector recovery will complement public investment efforts, fostering job creation, economic resilience, and sustainable reconstruction.

Public support is likely to remain necessary to help de-risk private investment in selected sectors.[50] For example, infrastructure projects typically face uncertainty that extends over a long payback period, making them less attractive to private investors without publicly financed risk mitigation. In particular, the government has made progress in developing war risk insurance for investment projects with donor support, which can make a major difference as long as this type of risk remains prevalent. Development partners, including IFC, have also supported risk-sharing facilities to incentivize bank lending to small and medium-sized enterprises (SMEs), including support for investments in clean energy solutions. Finally, the GoU and its international partners have actively sought to address labor shortages and skills mismatches that are a growing constraint for businesses and to invest through upskilling and reskilling initiatives.

Table 2. RDNA4 damage, loss, and needs by sector (US$ billion)

Sector	Damage	Loss	Needs
Social sectors			
Housing	57.6	21.1	83.7
Education and science	13.4	9.6	32.9
Health	1.6	19.6	19.4
Social protection and livelihoods[a]	0.4	14.4[a]	38.9
Culture and tourism	4.1	29.3	10.5
Infrastructure sectors			
Energy and extractives	20.5	72.3	67.8
Transport	36.7	46.7	77.5
Telecommunications, digital, and media	2.2	2.4	5.9
Water supply and sanitation	4.6	12.7	11.3
Municipal services	2.9	6.8	6.9
Productive sectors			
Agriculture	11.2	72.7	55.5
Commerce and industry	17.5	213.9	64.4
Irrigation and water resources	0.7	0.9	10.9
Finance and banking	0.0	5.2	2.1
Cross-cutting sectors			
Environment, natural resource management, and forestry	1.7	27.9	2.8
Emergency response and civil protection	0.4	0.5	2.4
Justice and public administration	0.4	2.8	0.9
Explosive hazards management	0.0	29.8	29.8
Total	**176.1**	**588.8**	**523.6**

Source: Assessment team. *Note:* Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months through June 30, 2026; needs cover the period 2025–2035. a. Under social protection, household income loss valued at US$72.9 billion is not included to avoid potential double-counting in relation to other sectors.

Table 3. RDNA4 damage, loss, and needs by oblast (US$ billion)

Oblast	Damage	Loss	Needs
Frontline regions, subtotal	**122.2**	**182.1**	**263.8**
Donetska	43.2	28.7	77.8
Zaporizka	14.6	61.2	40.1

[50] For a broader discussion of public and private instruments to mitigate different types of risks, refer to IFC, *Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine: Volume 1, Synthesis Report,* 2023, 16–17, Link.

Luhanska	15.6	18.9	35.4
Mykolaivska	6.3	12.4	16.1
Kharkivska	29.1	31.6	59.2
Khersonska	13.3	29.3	35.2
Support regions, subtotal	**8.5**	**101.3**	**42.9**
Vinnytska	0.5	8.7	5.1
Dnipropetrovska	4.1	53.3	18.9
Kirovohradska	0.3	6.4	3.1
Odeska	2.9	18.2	10.4
Poltavska	0.6	14.6	5.3
Backline regions, subtotal	**2.1**	**50.0**	**22.0**
Volynska	0.0	5.7	2.0
Zakarpatska	0.3	3.3	1.8
Ivano-Frankivska	0.1	8.4	2.1
Lvivska	0.8	9.0	4.1
Rivnenska	0.1	3.4	1.8
Ternopilska	0.1	4.0	2.1
Khmelnytska	0.4	6.5	3.7
Chernivetska	0.1	2.4	1.2
Cherkaska	0.2	7.3	3.3
Regions where government has regained control, subtotal	**26.4**	**155.6**	**81.4**
Kyiv City	4.4	33.6	11.1
Zhytomyrska	1.2	5.7	5.2
Kyivska	11.6	97.2	37.6
Sumska	4.0	9.8	12.4
Chernihivska	5.1	9.3	15.1
Not specified—nationwide, subtotal	**17.0**	**99.8**	**113.4**

Source: Assessment team. *Note:* Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months through June 30, 2026; needs cover the period 2025–2035. a. Under social protection, household income loss valued at US$72.9 billion is not included to avoid potential double-counting in relation to other sectors.

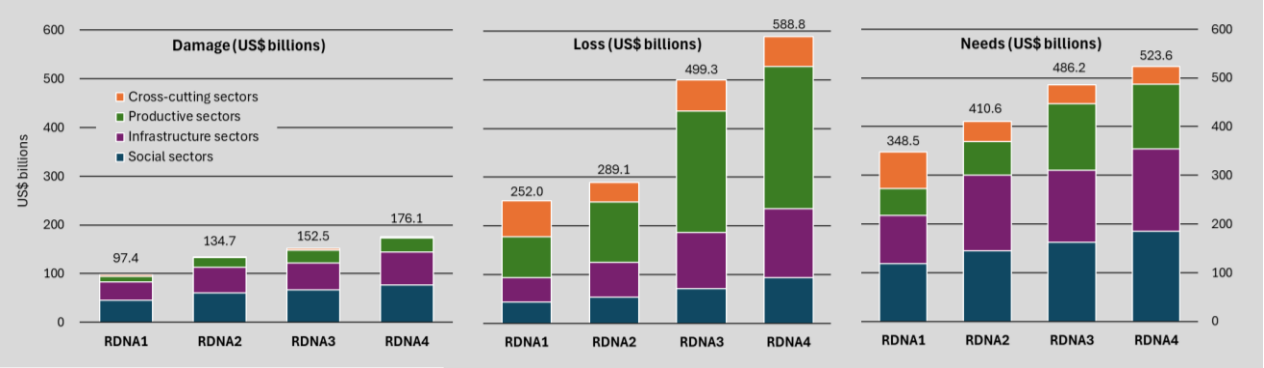
Table 4. RDNA1, RDNA2, RDNA3, and RDNA4 damage, loss, needs by sector (US$ billion)

	Damage				Losses				Needs			
Sector	**RDNA1**	**RDNA2**	**RDNA3**	**RDNA4**	**RDNA1**	**RDNA2**	**RDNA3**	**RDNA4**	**RDNA1**	**RDNA2**	**RDNA3**	**RDNA4**
Social sectors												
Housing	39.2	50.4	55.9	**57.6**	13.3	17.2	17.4	**21.1**	69.0	68.6	80.3	**83.7**
Education and science	3.4	4.4	5.6	**13.4**	0.5	0.8	6.9	**9.6**	9.2	10.7	13.9	**32.9**
Health	1.4	2.5	1.4	**1.6**	6.4	16.5	17.8	**19.6**	15.1	16.4	14.2	**19.4**
Social protection and livelihoods	0.2	0.2	0.2	**0.4**	4.5	4.2	9.5	**14.4**	20.6	41.8	44.5	**38.9**
Culture and tourism	1.1	2.6	3.5	**4.1**	19.3	15.2	19.6	**29.3**	5.2	6.9	8.9	**10.5**
Infrastructure sectors												
Energy and extractives	3.1	10.6	10.6	**20.5**	12.0	27.2	54.0	**72.3**	10.7	47.0	47.1	**67.8**
Transport	29.9	35.7	33.6	**36.7**	26.1	31.6	40.7	**46.7**	73.8	92.1	73.7	**77.5**
Telecom, digital and media	0.7	1.6	2.1	**2.2**	0.6	1.6	2.3	**2.4**	3.3	4.5	4.7	**5.9**
Water supply and sanitation	1.3	2.2	4.0	**4.6**	6.8	7.5	11.6	**12.7**	5.4	7.1	11.1	**11.3**
Municipal services	2.3	2.4	4.9	**2.9**	4.3	3.0	6.8	**6.8**	5.7	5.7	11.4	**6.9**
Productive sectors												
Agriculture	2.2	8.7	10.3	**11.2**	28.3	31.5	69.8	**72.7**	18.7	29.7	56.1	**55.5**
Commerce and industry	9.7	10.9	15.6	**17.5**	47.5	85.8	173.2	**213.9**	20.8	23.2	67.5	**64.4**
Irrigation and water resources	0.2	0.4	0.7	**0.7**	0.1	0.3	0.7	**0.9**	7.5	8.9	10.7	**10.9**

Finance and banking	0.0	0.0	0.0	**0.0**	8.1	6.8	5.7	**5.2**	8.0	6.8	2.3	**2.1**
Cross-cutting sectors												
Environment, natural resource management, and forestry	2.5	1.5	3.3	**1.7**	0.7	0.5	26.5	**27.9**	1.2	1.5	2.3	**2.8**
Emergency response and civil protection	0.1	0.2	0.4	**0.4**	0.2	0.5	0.5	**0.5**	0.7	1.5	2.3	**2.4**
Justice and public administration	0.1	0.3	0.3	**0.4**	0.0	1.4	1.7	**2.8**	0.2	0.6	0.7	**0.9**
Explosive hazards management	-	-	-	-	73.2	37.6	34.6	**29.8**	73.2	37.6	34.6	**29.8**
Total	**97.4**	**134.7**	**152.5**	**176.1**	**252.0**	**289.1**	**499.3**	**588.8**	**348.5**	**410.6**	**486.2**	**523.6**

Source: Assessment team. Data per RDNA1, RDNA2, RDNA3, and RDNA4. *Note:* - = not assessed.

Figure 16. Comparison of damage, loss, and needs for sector clusters across four RDNAs (US$ billion)



Source: Assessment team. Data per RDNA1, RDNA2, RDNA3, and RDNA4.

2025 RECOVERY AND RECONSTRUCTION PRIORITIES

This chapter outlines the GoU's 2025 recovery and reconstruction priorities. While analysis of priorities is not typically included in Post-Disaster Needs Assessments (PDNAs), it is critical for Ukraine and its development partners to understand the country's recovery and reconstruction priorities and funding mechanisms. These priorities will inform discussions on financing at the Ukraine Recovery Conference in Rome, Italy, in July 2025[51], a key international platform for mobilizing support. The conference builds on previous Ukraine Recovery Conferences, guided by the seven recovery principles established in the 2022 Lugano Declaration:[52] partnership, reform focus, transparency, accountability, democratic participation, multi-stakeholder engagement, gender equality, and sustainability.

The 2025 recovery and reconstruction priorities include both public investment projects[53] and non-investment programs totaling US$17.32 billion, with investment projects estimated at US$11.88 billion and non-investment programs at US$5.44 billion for 2025. Investment projects were identified using the PIM system introduced by the GoU in 2024. In its pilot phase, the emerging PIM system regulated the identification, preparation, and prioritization of public investment projects at the level of central government. It consolidated these projects into a pilot Single Project Pipeline, which served as the basis for funding and implementation decisions. The SPP[54] was approved by the SIC, chaired by the Prime Minister. Non-investment programs—such as transfers to households to compensate for loss and damage of housing and demining programs—followed a prioritization process led by the MDCT, with inputs from other line ministries. These programs were approved by the Cabinet of Ministers. Both priority projects and programs are categorized in line with the nine sectoral priority areas.

For public investment projects in 2025, out of US$11.88 billion need, US$5.46 billion of financing has been secured, leaving a financing gap of US$6.43 billion. All public investment project priorities have been selected from the SPP, which comprises 787 multi-year investment projects covering both capital and operational expenditures, with a total estimated cost of US$61.7 billion. From this pipeline, 304 projects were identified as investment priorities for 2025 totaling US$11.88 billion. 92 of the 304 projects secured US$5.25 billion in funding through the State Budget, including through state guarantees and contributions from IFIs. Additionally, 16 SPP projects totaling US$0.21 billion secured funding from the recurrent budget and international technical assistance grants: these projects are not included in the

[51] Ukraine Recovery Conference. 10—11 July, 2025. Rome, Italy. Link.
[52] See Government of Ukraine, "Plan for the Recovery of Ukraine (ПЛАН ВІДНОВЛЕННЯ УКРАЇНИ)," 2022, Link.
[53] According to the draft Law of Ukraine amending the Budget Code, which was adopted by Parliament but has not yet been signed by the President or entered into force as at February 1, 2025, a public investment project is a set of measures (organizational, legal, managerial, analytical, engineering, and technical), determined on the basis of the national system of strategic planning documents for the purpose of developmet, including reconstruction and recovery, of sectors, regions, and territorial communities, aimed at the creation (acquistion), reconstruction, technical re-equipment of fixed assets, other assets with a useful life of more than one year, not limited to individual investment object, which are fully or partially implemented at the expense of public invesetments, including on the terms of public-private partnership, except for projects related to the state's defence capability. The public investment program is the totality of public investment for the implementation of public investment projects aimed at achieving a common goals. The public investment program includes information on the amounts, terms, directions, criteria, and performance indicators of the relevant investments.
[54] Ministry of Finance of Ukraine, "Unified portfolio of public investment projects (list of priority public investment projects)", Single project pipeline (non-official translation), Link.

public investment program. The remaining 196 priority projects, which have a total estimated cost of US$6.43 billion for 2025, do not have an identified source of financing.

For non-investment priority programs in 2025, out of US$5.44 billion need, US$1.91 billion has been secured, leaving a financing gap of $3.53 billion. A total of 44 non-investment programs have been chosen as priorities and have an estimated total cost for 2025 of US$5.44 billion. 19 non-investment programs are receiving support from the budget and development partners (US$1.91 billion), with a remaining financing gap of 25 programs (US$3.53 billion).

Strategic Considerations for Recovery and Reconstruction

There is a growing recognition that reconstruction presents an opportunity to rethink Ukraine's future—not simply to restore what was lost, but to build stronger, more modern, and more resilient institutions and infrastructure.[55] Building on the foundation set by the Lugano principles, the Government of Ukraine considers several elements vital in addressing the evolving reconstruction needs and long-term development goals. These considerations include institutional alignment, economic transformation, EU accession, private sector engagement, inclusivity, sustainability, and subsidiarity. Each of the considerations is discussed in turn below.

Institutional Alignment

The Government recognizes that a whole-of-government approach is essential to facilitating successful recovery and reconstruction. Stronger inter-institutional coordination has already been demonstrated through the PIM pilot phase, which brought together key ministries and agencies to plan and prioritize public investments. Ministries and agencies identified their investment priorities and presented project proposals. The Ministry of Finance (MoF), the Ministry of Economy (MoE), and the MDCT collaborated to appraise and prioritize investment proposals to ensure their alignment with national recovery and development objectives**.** The SIC, chaired by the Prime Minister, made the final decisions on the selection of priority projects. This collaborative approach lays the foundation for a systematic, evidence-based investment management process that will become more structured in future budget cycles. Further work is needed on national strategic planning and sectoral plans to support the identification of projects and the refinement and more rigorous application of prioritization criteria.

Economic Transformation

The Government is already planning for Ukraine's long-term economic future, recognizing that recovery presents an opportunity for transformation rather than simply rebuilding pre-invasion structures. This consideration emphasizes Ukraine's transition to an "economy of the future" by enhancing long-term competitiveness while addressing immediate needs. This consideration emphasizes Ukraine's transition to an "economy of the future" by prioritizing sustainable energy, digital transformation, and innovation-driven industries.

[55] "Building back better" is an approach to recovery and reconstruction that seeks not only to restore what was lost but to improve the resilience, sustainability, and inclusiveness of infrastructure, systems, and communities. Originally coined in the context of disaster recovery, it emphasizes leveraging post-crisis opportunities to address pre-existing vulnerabilities, modernize public systems, and adopt innovative solutions. This approach ensures that recovery efforts do not simply rebuild structures and systems to their former state but enhance them to withstand future challenges, including Ukraine's path towards EU accession.

EU Accession

Ukraine's European Union (EU) accession agenda is a critical driver of recovery and reconstruction. This reflects Ukraine's long-term strategic goal of EU membership and the need to integrate European accession requirements across all aspects of recovery, from governance and institutional reforms to infrastructure development and environmental sustainability. Since the opening of accession negotiations in June 2024, bilateral screening meetings on Cluster 1 (Fundamentals) have taken place, covering key areas such as Public Administration Reform and PIM. Further PIM reforms will be closely tied to Ukraine's progress in aligning with the EU acquis, reflecting its commitments as a candidate country.

Private Sector Engagement

Private sector engagement is central to Ukraine's reconstruction.[56] The private sector's involvement is expected to expand during the recovery and reconstruction phase. While government support has been essential under martial law, long-term recovery will require significant private investment. Strengthening market infrastructure will be key to attracting capital and ensuring sustainable growth. Public-private partnerships (PPPs), sector liberalization, and targeted public investments will help create the conditions for private sector participation. The evolving PIM system will play a crucial role in identifying priority projects that align with reforms and foster a more supportive business environment.

Inclusivity

Recovery and reconstruction must address the needs of vulnerable groups—displaced persons, war veterans, women, children, and older persons—to ensure that all Ukrainians benefit. Recovery will promote equitable access to services, housing, and livelihoods, enabling these populations to rebuild their lives and fully participate in the nation's future. The transitional prioritization criteria for 2025[57] partially applied this consideration by identifying projects that promote equitable access to services, housing, and livelihoods. As the PIM system evolves, inclusivity will be integrated into investment decision-making more systematically, ensuring that reconstruction fosters social cohesion and resilience.

Sustainability

Sustainability requires the integration of adaptation and mitigation measures into recovery and reconstruction efforts. Investment in climate-smart infrastructure[58] reduces vulnerability to future shocks, aligns with Ukraine's green transition goals, and supports long-term resilience. The transitional prioritization criteria adopted in 2024 incorporate sustainability considerations, particularly for climate-smart infrastructure and resilience-building measures. While not yet fully embedded within the evolving

[56] This section draws on the IFC. "Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine," 2023; Link.
[57] Cabinet of Ministers of Ukraine Resolution, dated August 9, 2024, no. 903, on 'Some issues for preparation, submission, evaluation and prioritization criteria for public investment project concepts for 2025; Link.
[58] Climate-smart infrastructure refers to the design, development, and operation of infrastructure systems that integrate resilience to climate change with the goal of reducing greenhouse gas emissions. This approach ensures that infrastructure not only meets current societal needs but also contributes to long-term environmental, economic, and social sustainability. These projects are designed to withstand the impacts of climate change, such as extreme weather events, rising sea levels, and shifting climatic patterns, while minimizing their carbon footprint through the adoption of low-carbon technologies and resource-efficient practices. Such infrastructure aligns with global climate goals, including those outlined in the Paris Agreement. Examples include flood-resilient transportation networks, energy-efficient public buildings, renewable energy projects, and sustainable water management systems.

PIM system, these sustainability considerations will become integral to investment planning as Ukraine continues its green transition.

Subsidiarity

Regional administrations and local self-governments (LSG) will play a central role in reconstruction efforts. As the PIM system evolves, regional administrations and LSGs will have greater responsibility for investment planning and project implementation. Subsidiarity acknowledges the distinct roles of central, regional and local governments in public investment management, and it recognizes that LSGs are best placed to identify and address the specific needs of their communities. As the PIM system continues to evolve, central government is expected to provide the overarching policy framework and strategic guidance, while regional administrations and LSGs will prepare and manage their own public investment pipelines, aligned with local, regional and national priorities. By applying the principle of subsidiarity, the recovery process will ensure that LSGs are empowered to address community-specific priorities while remaining consistent with national and regional strategies. This decentralized approach promotes accountability, fosters local ownership, and enhances the efficiency of project implementation, ensuring that both central and local efforts contribute effectively to Ukraine's recovery and reconstruction goals.

Prioritization Process

The Government prioritized the 2025 investment recovery and reconstruction priorities through its evolving PIM system, while the MDCT led selection on non-investment programs in coordination with other key spending units (KSUs). The process of identifying investment priorities marks a departure from the process followed for the identification of recovery and reconstruction priorities in RDNA2 and RDNA3. Earlier RDNA processes selected projects bottom-up based on proposals submitted by line ministries. Projects were not prioritized across sectors. In addition to investment projects, the Government has also prioritized selected non-investment programs as critical recovery and reconstruction activities. These non-investment programs were prioritized through an MDCT-led process that identified recovery and reconstruction non-investment programs outside the PIM process.

Ukraine's 2025 recovery and reconstruction needs prioritized nine key sectors selected by the SIC (Error! Reference source not found.**Table 5).**[59] Both public investment projects and non-investment programs were prioritized based on these nine sectoral priority areas. The nine sectoral priority areas differ from those presented in the rest of this RDNA4 report because the RDNA sector structure follows standardized categories used in all RDNA assessments.

Table 5. Nine sectoral priority areas for recovery and reconstruction

Category	Sectors	Focus Areas
Social Sector	Housing	Reconstruction of housing and industry related facilities.
	Education and Science	Rehabilitation of educational facilities and buildings.
	Health	Restoration and strengthening of medical infrastructure and facilities.
	Social Protection and Livelihoods	Reconstruction of facilities, systems and infrastructure related to war veterans, internally displaced peoples, social protection institutions, and state affairs.

[59] SIC approves priority directions for recovery: Denys Shmyhal. November 29, 2024. Link.

Infrastructure Reconstruction	Energy and Mining	Restoration and protection of energy and mining systems and infrastructure.
	Transport	Rehabilitation of transport networks and infrastructure.
	Water Supply and Sanitation	Reconstruction and restoration of water supply, sanitation, irrigation, and waste management systems and infrastructure.
Demining and Civil Protection	Explosive Ordnance Management	Clearing and managing explosive remnants to protect lives and restore safe access.
	Emergency Response and Civil Protection	Developing and reconstructing large-scale shelters and strengthening civil defense mechanisms.

Source: Strategic Investment Council approves priority directions for recovery: Denys Shmyhal. November 29, 2024. Link.

Public Investment Projects

Public investment priorities were identified through the Government's evolving PIM system. This system, piloted in 2024, remains in its early stages of development. The PIM system was outlined in the GoU's PIM Roadmap[60], adopted in December 2023, and further detailed in the PIM Action Plan, approved by the Cabinet of Ministers of Ukraine on June 18, 2024, under Decree No. 588-p. The PIM Roadmap outlines the overall system. The PIM Action Plan establishes specific measures and timelines for its development and implementation. The pilot phase has focused on central government investments. The transitional phase (2024—2025) is dedicated to creating the prerequisites for shifting to a new public investment management model, with full operationalization at the central level expected in 2026. The implementation phase (2026—2028) will focus on deploying the new PIM model, with a gradual rollout to the local level beginning in 2025.

The pilot PIM process generated a central government Single Project Pipeline of 787 projects eligible for external financing and inclusion in the State Budget. The SPP will be updated regularly to reflect evolving priorities. Ministries and agencies submitted project proposals in line with national, regional, and sector development strategies. The MOF, the MOE, and the MDCT appraised project proposals using transitional criteria that assessed each proposal's strategic alignment with strategic reconstruction priorities, economic and social impact, development impact, feasibility, and compatibility with the fiscal envelope approved for the 2025 budget framework (Box 7). The criteria were designed specifically for the pilot phase and will be revised in the next investment programming exercise to reflect emerging priorities and lessons learned from the pilot phase.

Box 7. Transitional criteria for prioritizing public investment concepts for the 2025 Budget cycle

1. **Strategic alignment**
   - **Alignment with national and sectoral strategies**: Projects must align with Ukraine's key strategic documents and government priorities.
   - **Relevance of need**: Projects must address immediate priorities, such as critical infrastructure restoration, energy systems integration, and support for economic recovery.
2. **Socio-economic impact**
   - **Location and safety**: Projects must be implemented in government-controlled areas or territories liberated post-February 2022, ensuring they meet safety requirements.

[60] Roadmap for Reforming Public Investment Management System, 2023, Link.

- **Population coverage**: Projects are prioritized based on their ability to serve large segments of the population and meet demonstrated demand.
- **Economic impact**: Emphasis is placed on projects that: improve labor productivity and service delivery; create or preserve jobs; generate additional budget revenues; promote export orientation and protect critical infrastructure.
- **Public safety**: Projects enhancing civil defense (e.g., shelters) are given additional weight.

3. **Financial feasibility**
   - **Affordability and availability of funding**: Projects must demonstrate the following: confirmed sources of funding (grants, co-financing, or public-private partnerships); plans for multi-year investment (for projects exceeding US$5 million); and financial sustainability in the context of Ukraine's constrained fiscal space.
4. **Technical feasibility and institutional capacity**
   - **Operational readiness**: Project must be in an advanced preparation stage.
   - **Implementation capacity**: Applicants must show readiness, with qualified teams and prior experience managing similar projects.
   - **Energy efficiency**: Projects must incorporate measures to reduce energy consumption by at least 20% or use renewable energy sources.
   - **Inclusiveness and sustainability**: Projects must: ensure accessibility for vulnerable populations and gender inclusivity; minimize environmental impacts and incorporate innovative solutions where applicable.

Source: Cabinet of Ministers of Ukraine Resolution, dated August 9, 2024, no. 903, on 'Some issues for preparation, submission, evaluation and prioritization criteria for public investment project concepts for 2025; Link.

The MOF, the MOE, and the MDCT focus on those dimensions of project appraisal that are consistent with their mandate. MoF assessed fiscal feasibility of proposals, ensuring that the approved public investment projects aligned with fiscal limits and available financing; MoE assessed economic recovery potential and opportunities for private sector engagement; and MDCT assessed integration with local and regional priorities. The SIC, chaired by the Prime Minister, approved a prioritized list of projects that constitutes the SPP. Projects included in the SPP are eligible for inclusion in the State Budget and for external financing. The SIC selected projects from the SPP to be included in the State Budget and in the medium-term expenditure framework, advised by the Inter-Agency Commission[61], and in consultation with the external partners on the financing available for specific projects. Going forward, complex projects that require technical assistance for project preparation may be submitted to the Project Preparation Facilities (PPFs) for further work on project design (see Box 8).

Box 8. Project preparation facilities to support the preparation of infrastructure projects in Ukraine

The Project Preparation Framework (PPF) is a strategic initiative developed by the Government of Ukraine (GOU) to address the challenge of preparing high-quality, finance-ready recovery and reconstruction projects. Given the scale of reconstruction needs, efficient project preparation is essential for the effective allocation of public, development partner, and private resources. To date, project preparation in Ukraine has relied heavily on bilateral support, often uncoordinated and directed toward specific projects, sectors or regions based on development partner priorities. This fragmented approach hinders efforts to ensure that project preparation align with national priorities and meet the quality, fiduciary, and environmental standards required for sustainable development and EU accession.

[61] In accordance with Resolution No. 10 of the Cabinet of Ministers of Ukraine, dated January 7, 2025, the Interagency Working Group for Public Investment Projects includes representatives from the Ministries of Economy, Finance, and Development of Communities and Territories, and the Reforms Office. Link.

The PPF is planned to be an integral part of Ukraine's Public Investment Management system. The SIC will select projects for inclusion in the Single Project Pipeline, directing those projects that require feasibility studies and further technical design to the Project Preparation Unit (PPU). The PPU will coordinate two planned project preparation facilities: the Ukraine Government PPF and the Ukraine FIRST initiative. The Ukraine Government PPF will prepare projects regardless of their source of financing. Ukraine FIRST, supported by the European Investment Bank (EIB) and European Bank for Reconstruction and Development (EBRD), will prepare projects primarily to be financed from the Ukraine Investment Framework (UIF). The PPU will direct projects to the appropriate preparation facility and oversees their work, ensuring alignment with Government priorities and international standards. A Consultative Group will facilitate consultation, coordination and information sharing among development partners and other stakeholders.

For purposes of project tracking and portfolio monitoring, the SPP distinguishes ten distinct substages of project readiness.[62] Figure 17 illustrates the key stages of the PIM cycle.[63] Within this cycle, the SIC and the Inter-Agency Commission track projects through two stages of identification (project idea and preliminary concept note), four stages of preparation (feasibility study, project design documentation (feasibility stage), project design documentation (project stage), and procurement ready) and four stages of implementation (up to 20 percent complete, 20–50 percent complete, 50–80 percent complete, and more than 80 percent complete).

The public investment system is still in its early stages of development. Technical guidance for the public investment process was introduced with the adoption in August 2024 of Resolution No. 903 by the Cabinet of Ministers, laying out transitional procedures for project preparation, submission, and prioritization. Sector ministries and subnational governments had less than a month to submit project proposals in line with the new guidance. Proposals were reviewed by the Strategic Investment Council during its second meeting on September 10, 2024. The limited time for preparation of project proposals undoubtedly impacted on quality: some projects are not yet aligned with stated priorities; and some are not implementation ready. The quality of project preparation is expected to improve in subsequent rounds and as the PIM system is institutionalized.

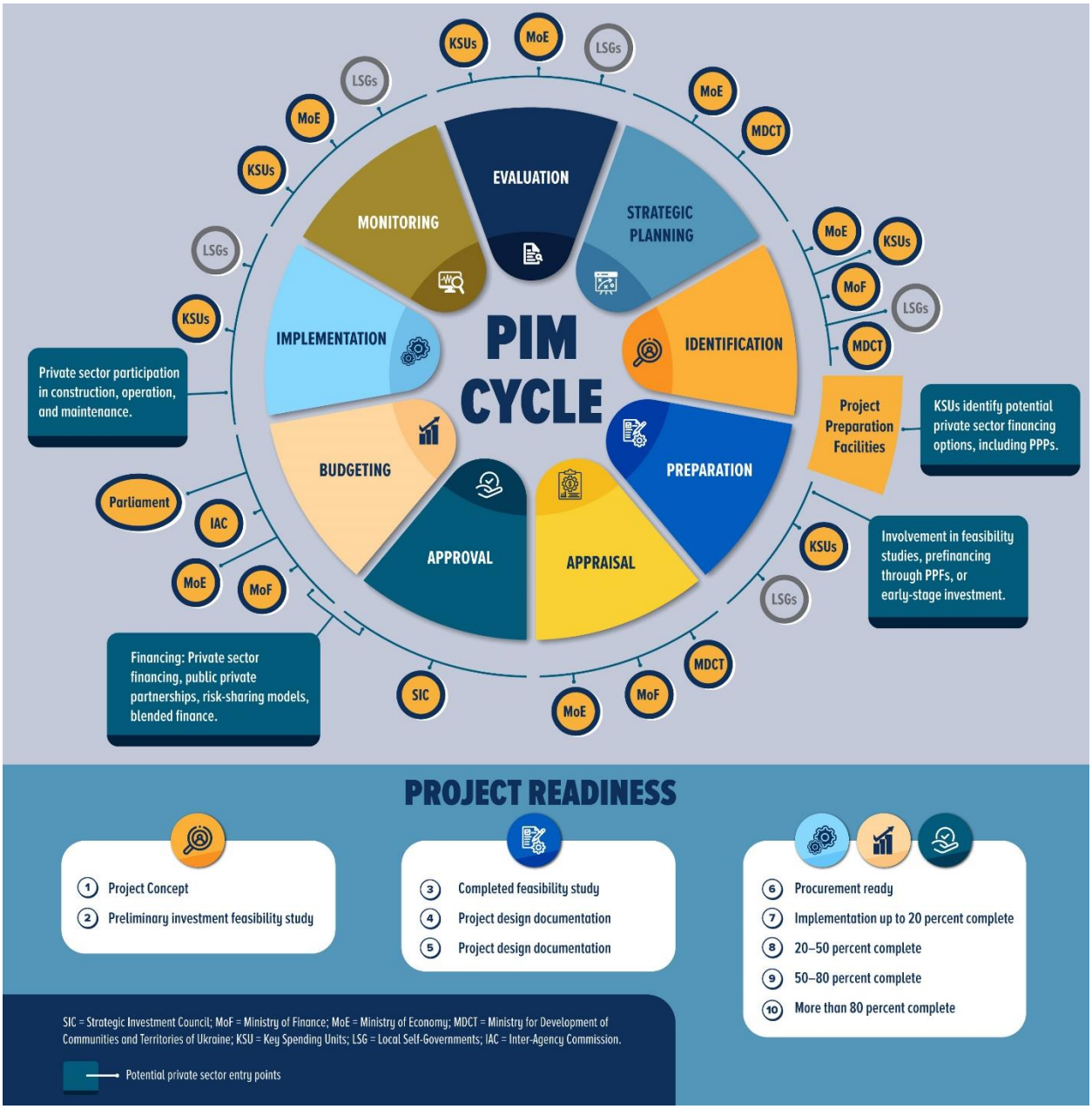
While the current PIM system has limited private sector involvement, the private sector's role is expected to expand as the system matures and post-war reconstruction progresses. Private sector engagement can be integrated at multiple stages of the PIM cycle, enhancing efficiency and mobilizing additional resources (see Figure 17). In the project preparation stage, the private sector can support feasibility studies, contribute to pre-financing through project preparation facilities, and facilitate early-stage investment. In the preparation phase, well-defined PPP frameworks, risk-sharing mechanisms, and blended finance models can create an enabling environment for private capital mobilization. During implementation, the private sector can play a critical role in the construction, operation, and maintenance of infrastructure projects, ensuring sustainable service delivery and long-term asset management.

[62] The ten stages of the public investment process are outlined in Cabinet of Ministers of Ukraine. (2024). *Resolution No. 903: Some issues of preparation, submission, evaluation and prioritization criteria for public investment project concepts for 2025.* August 9, 2024; Link.

[63] The PIM cycle involves a coordinated effort among key stakeholders. The SIC provides overall guidance, including approving the central SPP, while the MoE focuses on aligning national and sector strategies and preparing PIM methodologies and technical instructions. The MoF ensures fiscal alignment, assesses risks, and oversees budget preparation. The MDCT coordinates regional strategies and provides technical support to sub-national governments, which in turn prepare and manage local projects. Sector ministries identify, appraise, and implement projects within their domains.

Strengthening the regulatory framework and institutional capacity will be essential to harness private sector participation effectively, aligning investment priorities with national recovery and development goals.

Figure 17. Framework for public investment management at the central level



Source: Adapted from Public Investment Management Reference Guide by Kim, Jay-Hyung; Fallov, Jonas Arp; and Groom, Simon (2020). International Development in Practice. Washington, DC: World Bank. Link. Notes: Figure legend: SIC = Strategic Investment Council; MoF = Ministry of Finance; MoE = Ministry of Economy; MDCT = Ministry for Development of Communities and Territories of Ukraine; KSU = Key Spending Units; SNGs = Subnational Governments; IAC = Inter-Agency Commission.

Non-investment programs

MDCT led the process of identifying recovery and reconstruction programs for 2025 that did not meet the criteria for inclusion in the PIM process as public investment projects. Examples of such programs include compensation for damaged and destroyed housing, support for humanitarian demining efforts, and the provision of long-term loans for war veterans and internally displaced persons. This process was conducted independently of the SPP prioritization process. The MDCT issued a request to the key spending units in January 2025 to identify these programs. This was done after the deadlines for submitting programs under the 2025 budget policy planning process. Although the identification of these additional priorities occurred outside the standard budget cycle, almost all of them had been previously incorporated into the 2025 State Budget.

Analysis of Priorities for Recovery and Reconstruction in 2025

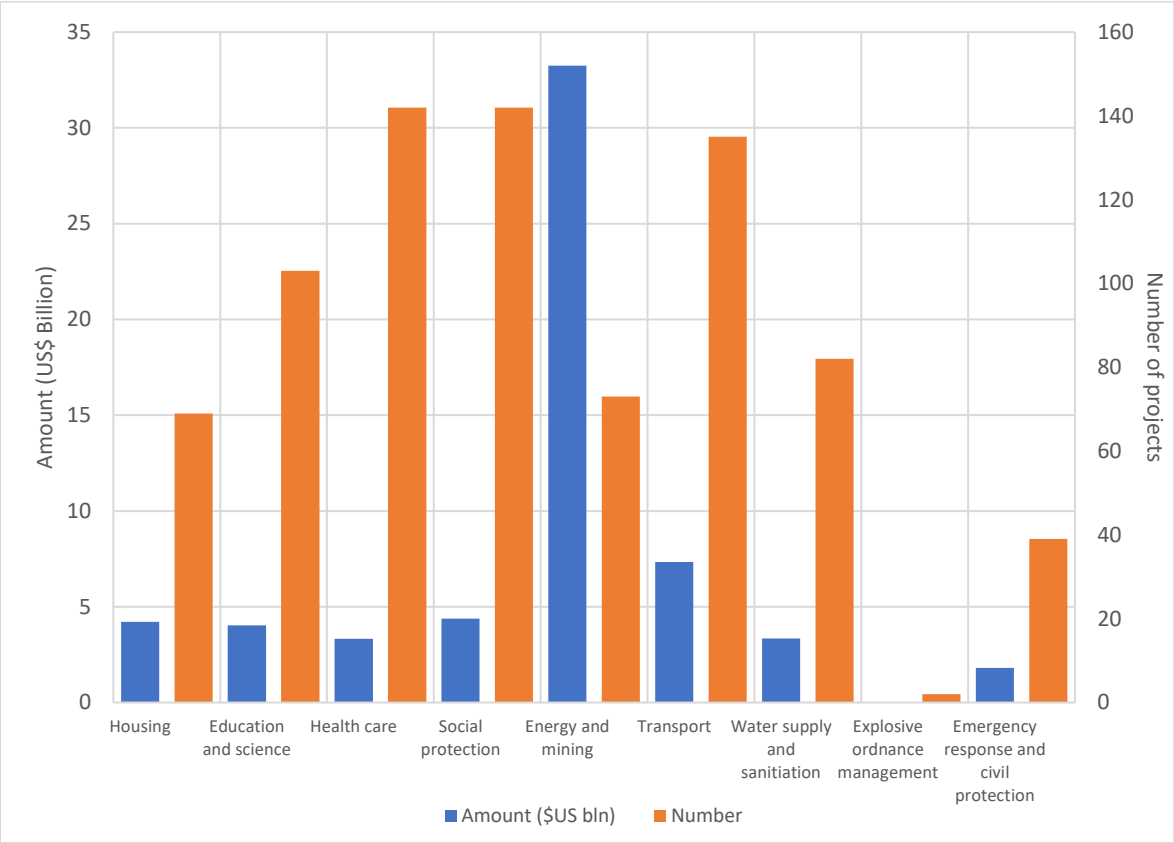
The 2025 recovery and reconstruction priorities are analyzed separately for public investments and non-investment programs. The analysis includes a portfolio review for each category and details the secured funding sources. The section concludes with an assessment of the financing gap, separated into projects and programs.

PUBLIC INVESTMENT PRIORITIES FOR RECOVERY AND RECONSTRUCTION

Single Project Pipeline Portfolio Review

The SPP consists of 787 public investment projects with a total estimated cost of US$61.7 billion across the nine sectors, with the largest shares of public investments allocated to essential services and critical infrastructure. These projects span multiple years, reflecting the long-term nature of public investment planning. The SPP includes 142 projects in social protection and healthcare, each accounting for 18 percent of the total. The transportation sector has 135 projects (17 percent), followed by education and science with 103 projects (13 percent). In financial terms, the dominant sector in the SPP is energy and mining, with a total estimated cost US$33.2 billion (54 percent). This is followed by transport at US$7.3 billion (12 percent) and social protection at US$4.4 billion (seven percent) (Figure 18). Healthcare accounts for US$3.3 billion (five percent), and education and science for US$4.0 billion (six percent). Water supply and sanitation (US$3.3 billion, five percent), emergency response and civil protection (US$1.8 billion, 3 percent) and explosive ordnance management (US$25.4 million, less than one percent) make up smaller shares.

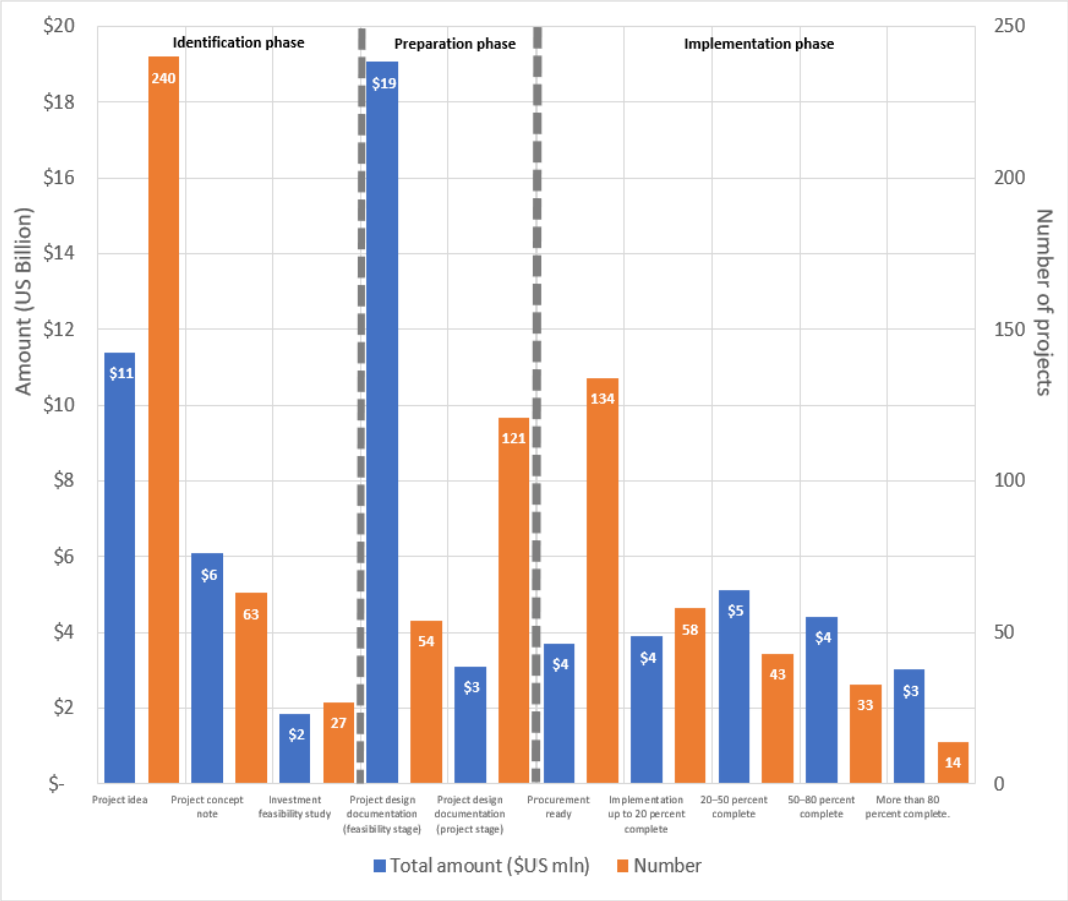
Figure 18. Distribution of SPP projects across the nine sectoral priority areas (US$ billion and number of projects)



Source: Assessment team articulations from approved Single Project Pipeline 2025, link.

SPP projects are heavily concentrated in the preparation and appraisal phases of the PIM cycle. Figure 19 illustrates their distribution across the ten stages of project readiness. The identification phase (SPP Stages 1 and 2) accounts for 303 projects (39 percent of total projects), with an estimated cost of US$17 billion (28 percent of the total cost). The Preparation phase (SPP Stages 3 to 5) includes 202 projects (26 percent of total projects), estimated at US$24 billion (39 percent of the total cost). Lastly, the implementation phase (SPP Stages 6 to 10) comprises 282 projects (36 percent of total projects), with a total cost of US$20 billion (33 percent of the total cost). While the majority of the pipeline is in preparation, projects in implementation are included because they lack sufficient funding, making them a priority for external development partners to ensure progress and prevent delays in critical infrastructure development.

Figure 19. Distribution of SPP projects across the stages of preparation (US$ billion and number of projects)

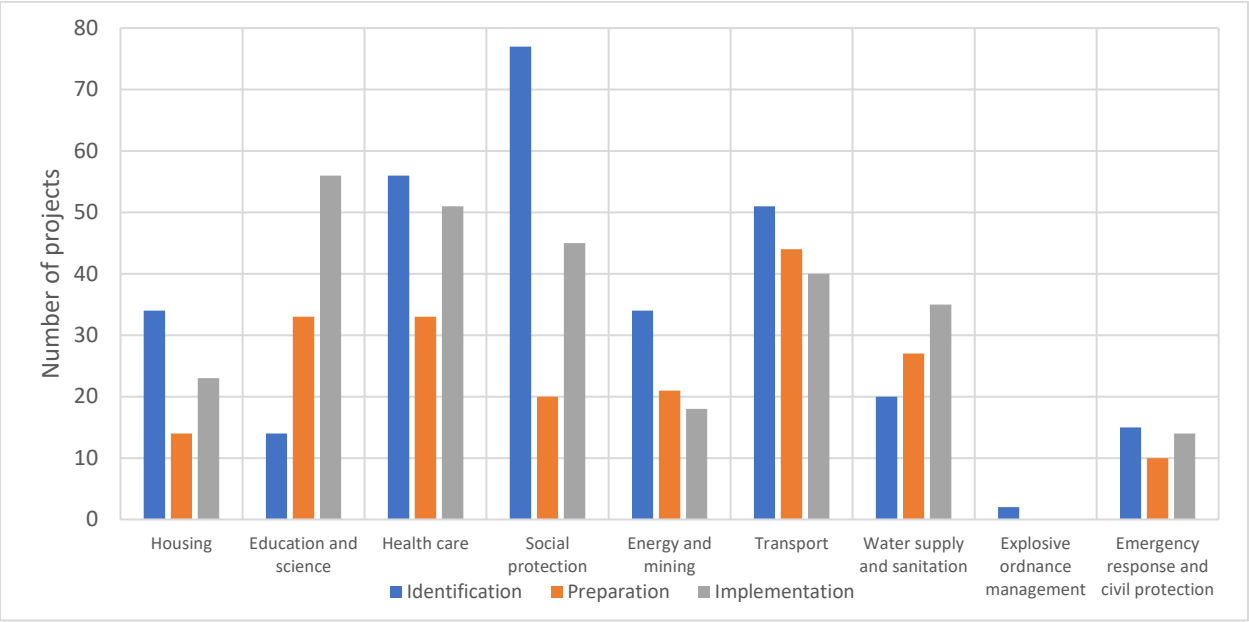


Source: Assessment team articulations from approved Single Project Pipeline 2025, link.

There are notable sectoral variations in project preparation and implementation. Figure 20 shows that 40 percent of healthcare projects, 54 percent of social protection projects, and 48 percent of housing projects are in the identification phase. 33 percent of transport projects, 32 percent of education and science projects, and 29 percent of energy projects are in the preparation phase. The implementation phase includes 36 percent of healthcare projects, 32 percent of social protection projects, and 54 percent of education and science projects. The relatively low level of readiness underscores the importance of targeted support for project preparation.

Regional administration and LSG involvement in the SPP has been limited during this pilot phase of the PIM system. For the 2025 pilot, only central entities and regional administrations were eligible to submit projects, while LSGs could not apply directly. Of the 787 projects in the SPP, 192 projects (24 percent) are national in scope. Regions heavily impacted by the invasion, such as Kharkivska and Zaporizka, account for less than ten percent of the total number of projects. Not all regional administrations and LSGs have developed recovery and reconstruction plans. The Government intends to strengthen regional administration and LSG participation and alignment with local priorities through capacity-development programs and support for regional and local planning and project identification and preparation.

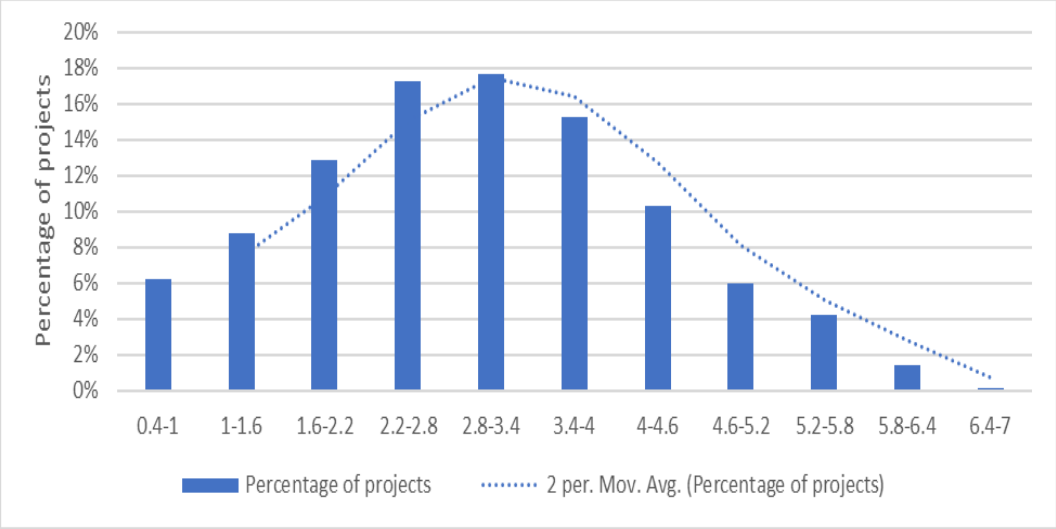
Figure 20. Sectoral distribution of SPP projects across the stages of preparation



Source: Assessment team articulations from approved Single Project Pipeline 2025, link.

The prioritization scores of SPP projects range from 0.49 to 6.92 out of a possible 10, with an average of 3.01 and a median of 2.98, reflecting moderate alignment with the Government's prioritization criteria. Approximately 60 percent of projects score between 2.5 and 4.0 (Figure 21). High-scoring sectors include healthcare and housing, with averages exceeding 4.0, with projects addressing urgent recovery needs such as medical facility reconstruction and housing for internally displaced persons amongst the highest scoring projects. Projects in water supply and sanitation and demining have lower scores on average, just 3.0 on average. There is clearly significant room for improvement in strategic alignment, readiness, and impact.

Figure 21. Distribution of SPP prioritization scores

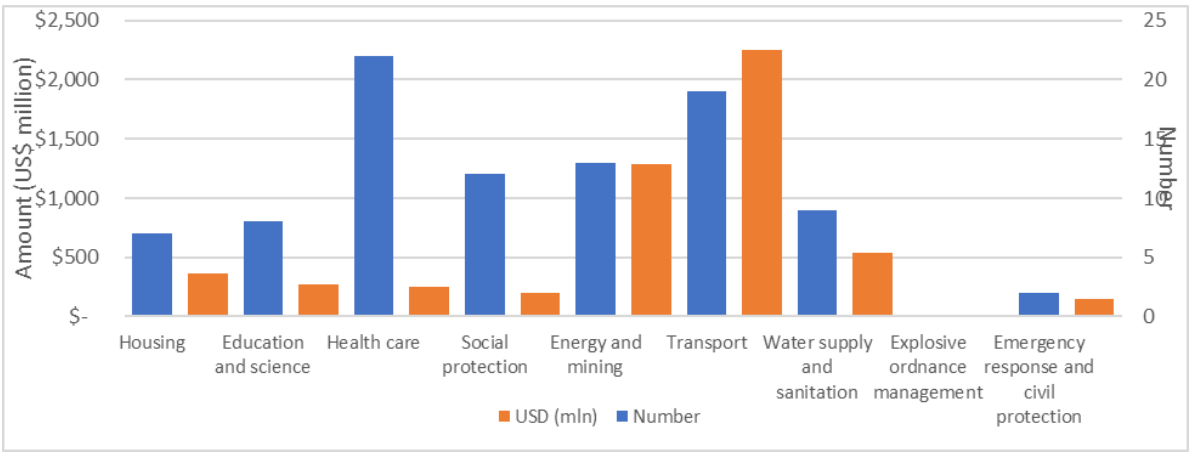


Source: Assessment team articulations from approved Single Project Pipeline 2025, link.

Analysis of Budgeted Projects from the Single Project Pipeline

Ninety-two projects from the SPP were included in the 2025 State Budget with a budget allocation equivalent to US$5.25 billion.[64] These projects represent 8.6 percent of the total SPP by amount, and 11.7 percent of the total SPP by number of projects. Projects included in the 2025 State Budget span nine sectoral priority areas, with the exception of the explosive ordnance management (Figure 22). Transport accounts for the largest allocation, with US$2.25 billion, followed by energy and mining (US$1.25 billion), water supply and sanitation (US$544 million), housing (US$376 million), education and science (US$256 million), and healthcare (US$256 million). Social protection, and emergency response and civil protection account for US$195 million and US$149, respectably. No explosive ordnance management investment projects were included in the 2025 budget.

Figure 22. Total budgeted investment projects for 2025 (US$ million and by number of projects)



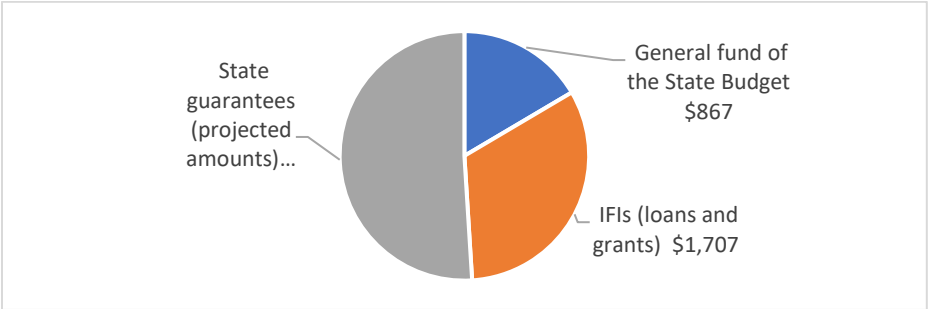
Source: Assessment team articulations from approved List of Priority Public Investment Projects in the State Budget of Ukraine 2025, link.

The 92 projects in the State Budget are financed from three primary sources: external partners and international financial institutions (IFIs) through loans and grants; state guarantees; and the general fund of the State Budget. IFIs account for the largest share in terms of project numbers, financing 43 projects, followed by the general fund of the state budget, which supports 36 projects and state guarantees, which finance 13 projects (Figure 23). Of the state guarantee projects, five projects are in the transport sector and eight are in the energy sector.[65] In terms of financial allocation, state guarantees contribute US$2.68 billion, IFIs will finance US$1.71 billion, and the general fund has allocated US$867 million. This distribution highlights the critical role of external financing in Ukraine's recovery efforts and its reliance on state guarantees for large-scale infrastructure and development initiatives.

[64] Ministry of Finance of Ukraine, "Unified portfolio of public investment projects (list of priority public investment projects)", List of priority public investment projects in the State Budget of Ukraine for 2025 (non-official translation), Link.

[65] State guarantees in the context of Ukraine's 2025 budget refer to financial assurances provided by the government to support specific projects or obligations. These guarantees, amounting to up to US$2.74 billion, can be issued under international agreements to fund strategically significant investment, innovation, and infrastructure projects that contribute to economic development and energy efficiency. They also extend to covering debt obligations of fully state-owned public sector entities, ensuring their liquidity and sustainability. Such guarantees may include provisions waiving Ukraine's sovereign immunity in disputes, without requiring parliamentary ratification. For more information on state guarantess, see "On the State Budget of Ukraine for 2025"; Link.

Figure 23. Total budgeted investment projects for 2025 (US$ million)

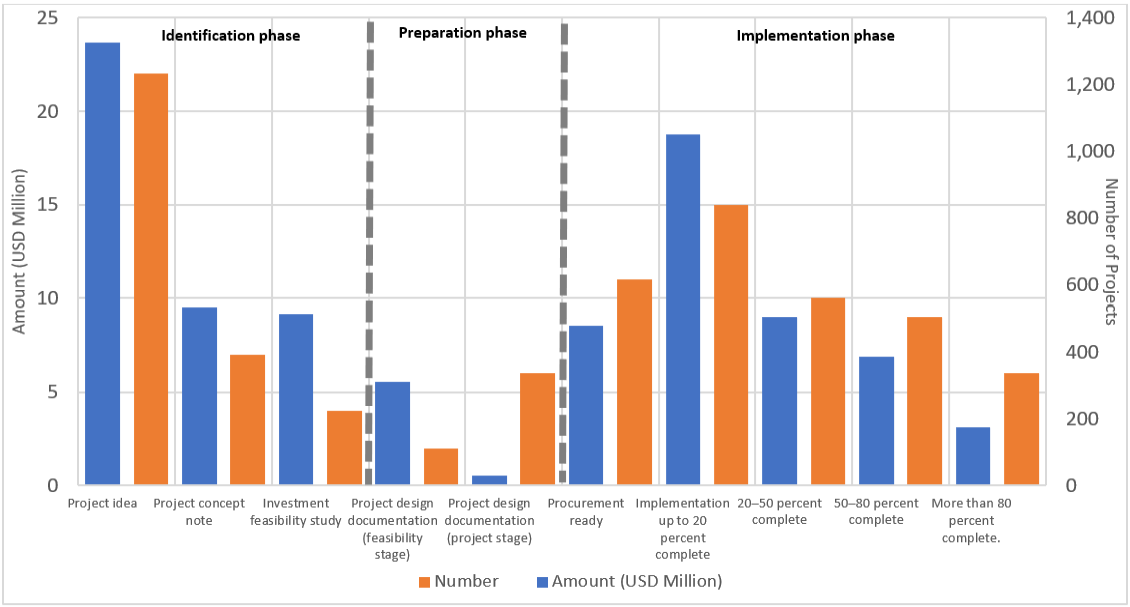


Source: Assessment team articulations from approved List of Priority Public Investment Projects in the State Budget of Ukraine 2025, link.

Projects classified under state guarantees in the budget do not necessarily have a secured financing source. While US$2.68 billion has been allocated in the 2025 budget for 13 projects expected to be financed through state guarantees, this allocation represents the government's commitment to guarantee loans rather than direct funding. The actual financing depends on whether investors choose to fund any of these 13 projects. As a result, the failure to secure financing partners for these projects could further contribute to the overall financing gap.

The readiness of these 92 priority projects varies. The 92 projects are distributed across various stages of readiness, with the majority concentrated in early stages (Figure 24). There are 29 projects, totaling US$1.86 billion, that are in the identification phase (32 percent of total projects); 12 projects, totaling US$0.86 billion in the preparation phase, (13 percent); and 51 projects, totaling US$2.5 billion, are in the implementation phase (55 percent).

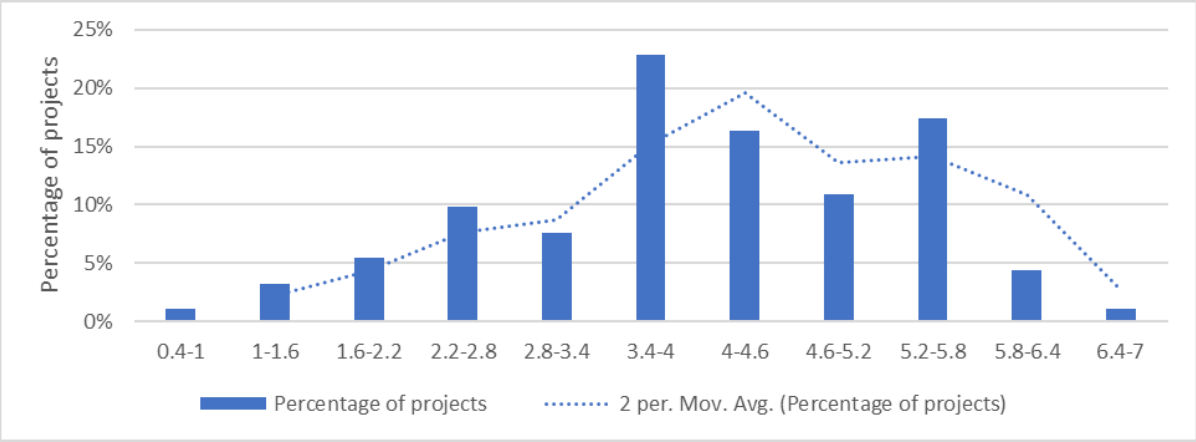
Figure 24. Distribution of budgeted projects across the stages of preparation (US$ million and number of projects)



Source: Assessment team articulations from approved List of Priority Public Investment Projects in the State Budget of Ukraine 2025, link.

The prioritization scores of budgeted projects range from 0.92 to 6.92, with an average of 3.98, reflecting moderate alignment with strategic objectives and readiness. Most projects cluster in the mid-range, particularly between 3.4 and 4. A smaller subset of projects scores above 5.47, indicating strong technical readiness and alignment, while fewer projects fall below 2.2, indicating limited readiness or alignment. This distribution highlights the need for targeted support to elevate lower-scoring projects and ensure their advancement while prioritizing high-scoring projects for implementation to maximize their impact on Ukraine's recovery objectives. See Figure 25.

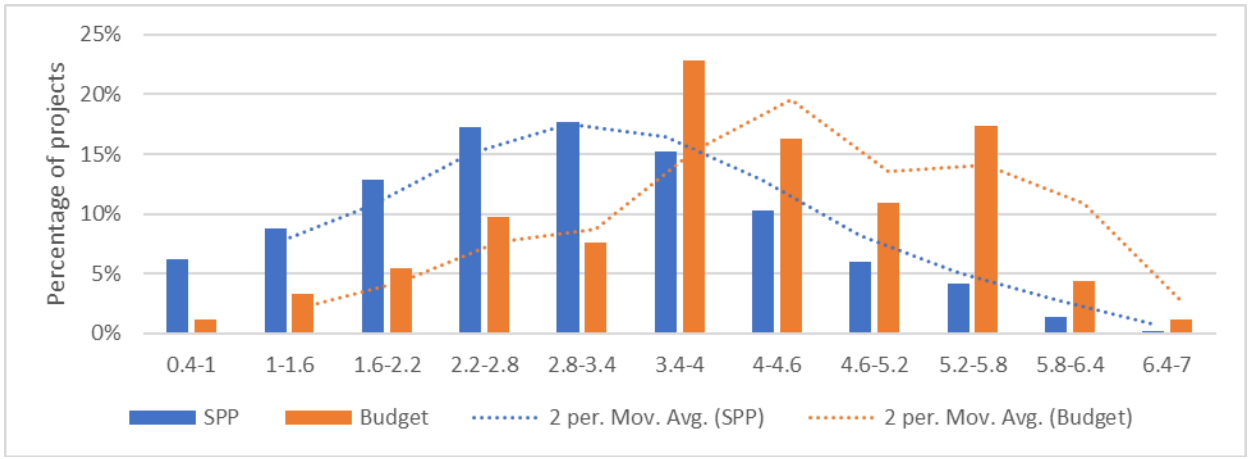
Figure 25. Distribution of budget projects prioritization scores



Source: Assessment team articulations from approved List of Priority Public Investment Projects in the State Budget of Ukraine 2025, link.

Budgeted projects consistently achieve higher prioritization scores than the broader SPP portfolio. Figure 26 shows a peak frequency of budgeted projects scoring between 3.4 and 4, while SPP projects are more evenly distributed, with the highest frequency in the 2.8 to 3.4 range. The moving averages further emphasize that budgeted projects are concentrated in higher scoring brackets.

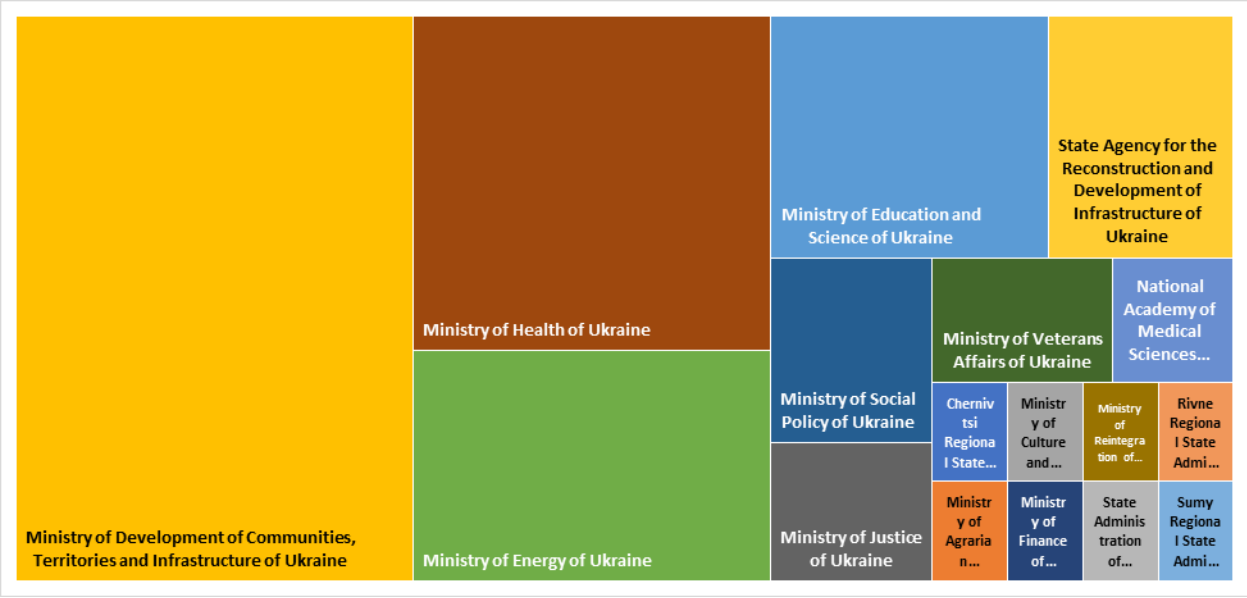
Figure 26. Average frequency of prioritization scores, SPP versus budget projects



Source: Assessment team articulations from approved List of Priority Public Investment Projects in the State Budget of Ukraine 2025, link.

The distribution of the 92 budgeted projects spans multiple spending units. MDCT oversees the largest share, managing 30 projects (32.6 percent) across key sectors such as transport, water supply, and housing. The Ministry of Health accounts for 16 projects (17.4 percent), which focus on healthcare infrastructure and rehabilitation facilities, while the Ministry of Energy accounts for twelve projects (13 percent (Figure 27). Regional administrations and other entities manage the remaining 34 projects (37 percent), which include education projects, localized infrastructure repairs, and water management initiatives.

Figure 27. Breakdown of budget project allocation (number) by key spending unit



Source: Assessment team articulations from approved List of Priority Public Investment Projects in the State Budget of Ukraine 2025, link.

In addition to the 92 SPP projects funded through capital budget allocations, 16 SPP projects have secured US$0.21 billion in funding through the recurrent budget and international technical assistance grants for 2025. These projects fall within the following sectoral priority areas: housing, energy and mining, healthcare, education and science, emergency response and civil protection, transport, and explosive ordnance management. The largest funding allocations are directed to energy and mining (33 percent of total funding) and healthcare (30 percent).

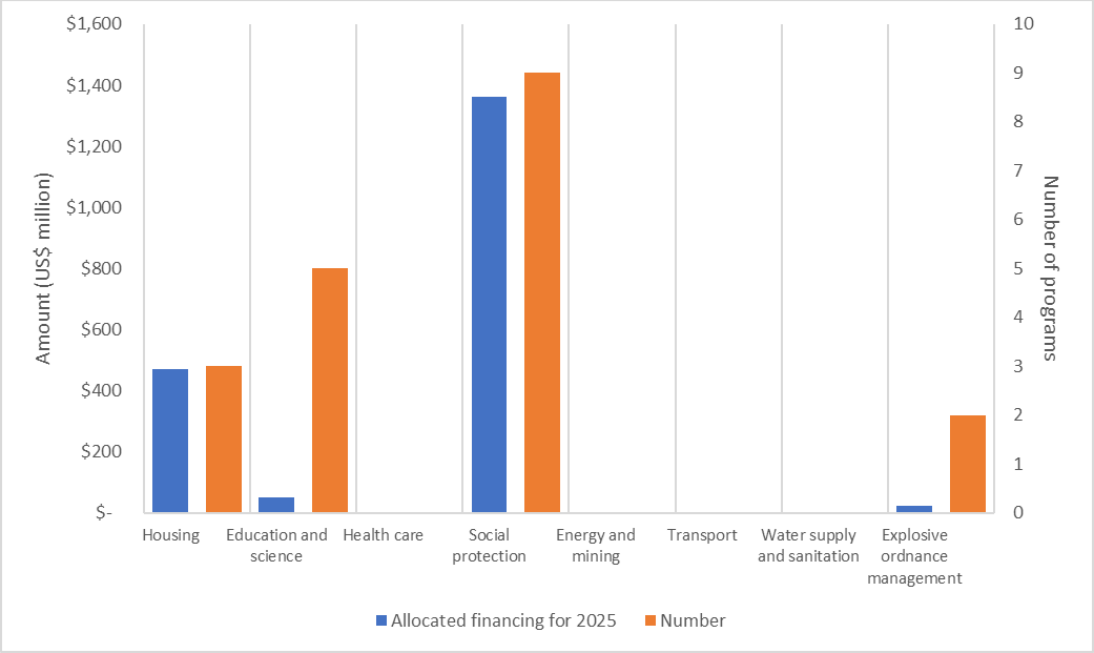
NON-INVESTMENT PROGRAM PRIORITIES FOR RECOVERY AND RECONSTRUCTION

Non-Investment Program Portfolio Review

The MDCT led the process of identifying recovery and reconstruction programs for 2025 that did not meet the criteria for inclusion as public investment projects. This process was conducted independently of the SPP prioritization process. None of these non-investment programs are included in the SPP. Of the 19 non-investment programs, 17 are listed as recurrent expenditure in the general fund of the State Budget. Two are recurrent programs funded by development partners (one Housing and one Education).

Only four of the nine sectoral priority areas have priority non-investment programs for 2025. Nine social protection programs received a total allocation of US$1.36 million. Three housing non-investment programs were allocated US$470 million. Five education and science non-investment programs received US$49 million, while two explosive ordnance management non-investment programs were allocated US$24 million (Figure 28). No financial allocations were made for healthcare, transport, water supply and sanitation, or emergency response and civil protection non-investment programs in 2025.

Figure 28. Total non-investment program allocations for 2025 (US$ million and number of projects)



Source: Appendix 3 of 2025 Budget.

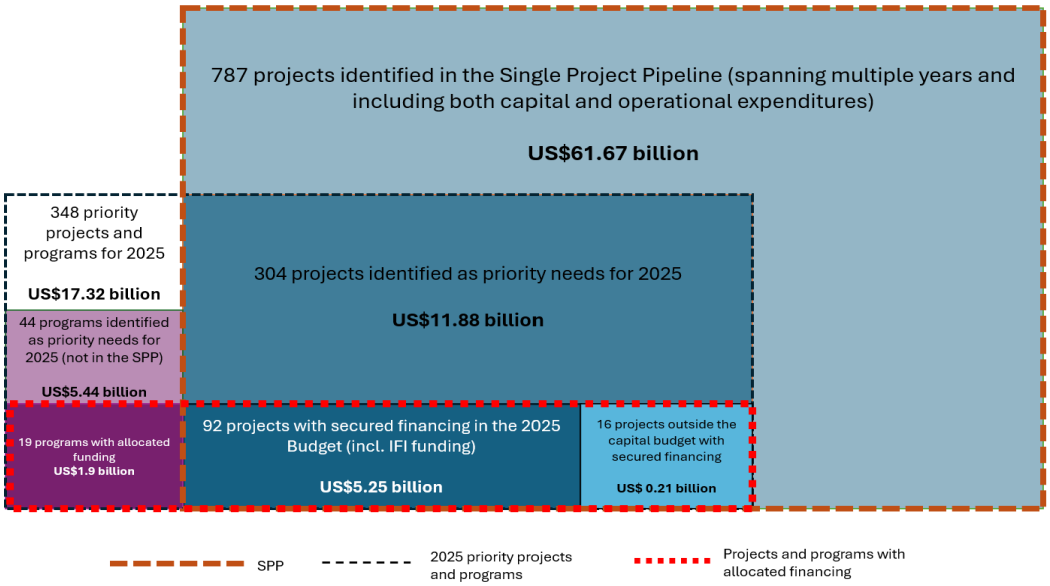
FINANCING GAP

A key objective of the RDNA prioritization exercise is to identify the financing gap, enabling international partners to understand immediate needs. The SPP has served as the basis for defining the overall scope of required financing for investment projects. The financing needs for non-investment programs have been assessed separately. This analysis will inform discussions on financing at the Ukraine Recovery Conference in Rome, Italy, in July 2025, a key international platform for mobilizing support.

The Government of Ukraine faces a financing gap of US$9.96 billion for recovery and reconstruction investment projects and non-investment programs in 2025. The total estimated cost for 2025 amounts to US$17.32 billion, including US$11.88 billion for investment projects and US$5.44 billion for non-investment programs (Figure 29). Of this, US$5.46 for investment projects and US$1.91 for non-investment programs has already been secured through the State Budget and contributions from development partners. The financing shortfall stands at US$6.43 billion for investment projects and US$3.53 billion for non-investment programs. Table 6 shows the categorization of the total needs and financing gap by sector. Recovery and reconstruction priorities were estimated at US$15.3 billion in 2024 (RDNA3) and US$14.1 billion in 2023 (RDNA2); however, previous iterations of the RDNA employed

different methodologies and assessment frameworks for identifying and prioritizing needs. The Government is preparing a report on the execution of investment projects from the previous fiscal year and updating data on absorption capacity for implementing investment projects and priority non-investment programs. However, this information was not available at the time of this report's preparation.

Figure 29. Financing needs and secured funding for recovery and reconstruction investment projects and non-investment programs



Source: Assessment team.

Table 6. The 2025 priority investment project and non-investment program needs and financing gap, by sector (US$ million)

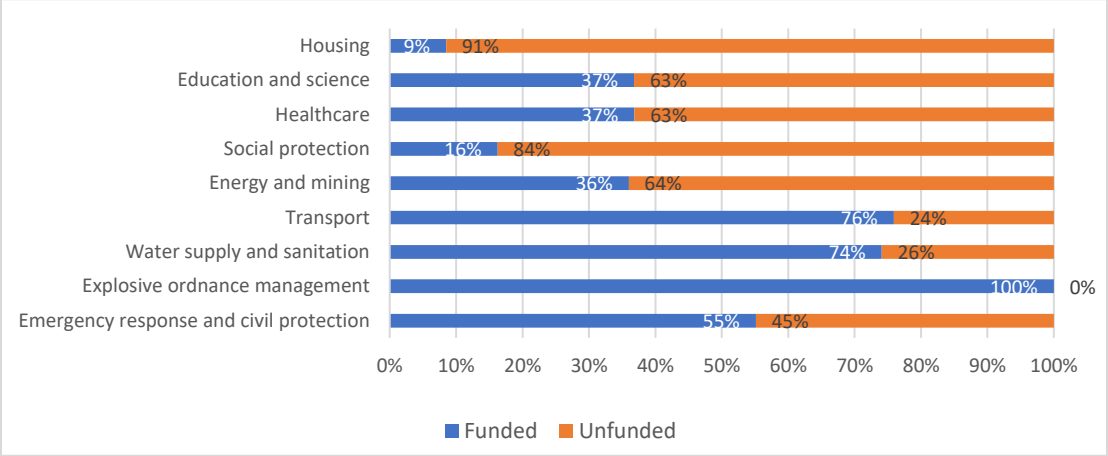
Sectoral priority areas for recovery and reconstruction	Need for 2025	Financing gap for 2025
Housing	4,025	3,417
Education and science	1,225	760
Health	860	543
Social protection and livelihoods	2,020	571
Energy and mining	4,802	3,510
Transport	2,992	730
Water supply and sanitation	730	189
Emergency response and civil protection	78	35
Explosive hazards management	236	205

Source: Assessment team. *Note*: US$352 million is not represented here, as it was tagged as 'multi-sectoral'. These multi-sectoral priorities have received funding for 2025, so there is no financing gap.

A total of 304 public investment projects from the 787 investment projects in the SPP have been identified as Ukraine's recovery and reconstruction priority investment projects for 2025. The total estimated cost of these 304 investment projects is US$11.88 billion for 2025. These investment projects were approved by the SIC, and are all in the SPP. Of the 304 investment projects, 92 have been allocated

financing through the 2025 capital budget, totaling US$5.25 billion. Another 16 projects were classified as non-investment projects, also in the SPP, and secured US$0.21 billion in funding from the recurrent budget and international technical assistance grants for 2025. This leaves a financing gap for priority public investment projects of US$6.43 billion for 2025. In the energy and mining, housing, education and science, and healthcare sectoral priority areas, there is an average financing gap of US$1.1 billion. Figure 30 presents the proportion of funded and unfunded public investment projects across nine priority areas.

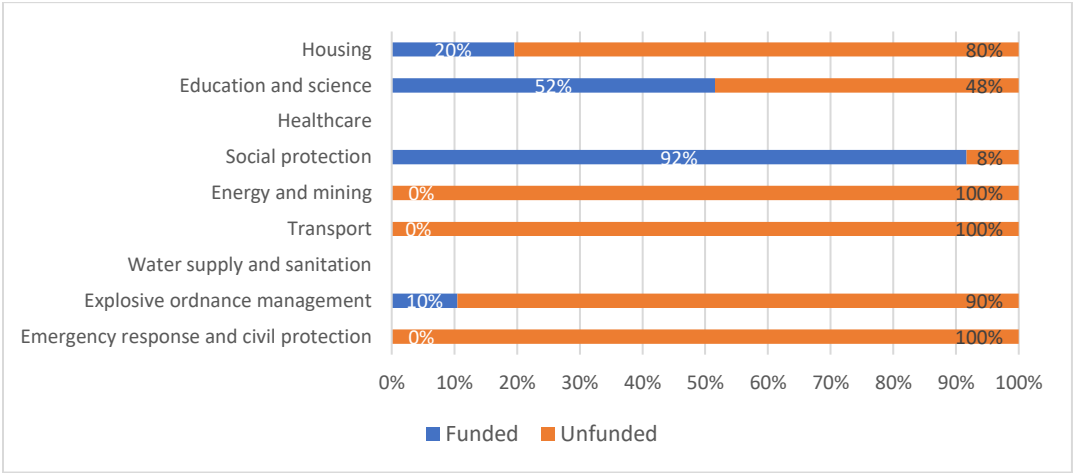
Figure 30. Funded versus unfunded 2025 priority public investment project (percentage)



Source: Assessment team.

A total of 44 non-investment programs have been identified as Ukraine's priority recovery and reconstruction non-investment programs for 2025. The total estimated cost for these 44 priority non-investment programs for 2025 is US$5.44 billion. Of these 44 non-investment programs, just 19 have been allocated funding from the recurrent budget and international partners, totaling US$1.90 billion for 2025. In the housing, and the energy and mining sectoral priority areas, there is a financing gap of US$1.9 billion and US$1.2 billion, respectably. Figure 31 shows the percentage of funded and unfunded non-investment programs across nine sectoral priority areas.

Figure 31. Funded versus unfunded 2025 priority non-investment programs (percentage)



Source: Assessment team.

Recommendations for Strengthening the Prioritization Process

Effective prioritization is critical for ensuring that Ukraine's recovery and reconstruction investments address urgent needs and lay the foundation for long-term development and resilience. The Government of Ukraine introduced a transitional whole-of-government public investment system for the first time in 2024. This system generated the SPP and the State Budget for 2025. The SPP and the 2025 State Budget have been used as the basis for identifying public investment priorities in RDNA4. This represents a significant step toward the institutionalization of transparent and evidence-based public investment management system. However, further work is needed to improve the quality of public investment projects particularly in terms of strategic alignment, technical design and readiness for implementation, implementation capacity, leveraging private financing, and integration mechanisms to enhance the impact and sustainability of recovery efforts. Stakeholders involved in PIM prioritization will need to accept the results of the prioritization process – even if it does not favor their own priority projects and programs – if the PIM system is to deliver a balanced and objective allocation of resources that aligns with national recovery and development goals.

Strategic Planning

Investment projects should be identified from sector and territorial strategic plans that inform key decisions in project design and prioritize between alternative applications of scarce public funds in their domain. The 2024 exercise to identify public investment projects for the SPP revealed significant gaps in coordination and integration with territorial and sector-level strategies. Many projects were identified in isolation, without sectoral or territorial plans to ensure prioritization and coherence. The Government of Ukraine is now drafting the Concept of the National Strategic Planning System as well as the procedure for developing sectoral strategies and a framework for monitoring, evaluation, and reporting, as stipulated by Resolution No. 588-r, which mandates updating sectoral strategies by the end of 2025. Implementation of this guidance will require significant capacity development and technical assistance for sector institutions at the national level and across regional administrations and LSGs.

Project Preparation

Investments in project preparation will improve the technical quality and implementation readiness of projects in the SPP. The establishment of the Project Preparation Unit and project preparation facilities will provide a framework for the preparation and technical design of the largest, complex, and high-risk projects. Further capacity development and technical assistance will be needed to support the preparation of the many smaller SPP investment projects and subprojects under larger sector investment projects.

Prioritization Criteria

The prioritization criteria applied in 2024 were transitional and will be updated based on lessons learned. One key takeaway is the need to simplify the criteria, particularly at the subnational level, where capacity and resources are more limited. While the current framework is comprehensive and well-intentioned, its complexity can be overwhelming for stakeholders. Streamlining the criteria to focus on core principles—such as strategic alignment, socio-economic impact, financial feasibility and implementation readiness —would help ensure a more accessible and efficient process. Simplification

would also reduce the administrative burden, allowing stakeholders to focus on preparing higher-quality projects that meet essential national recovery and development goals.

Prioritization Process

While the Government applied prioritization criteria to select the 787 projects for inclusion in the SPP, the process by which the 304 investment projects were identified as priority recovery and reconstruction projects for 2025 is unclear. Similarly, the selection process for 44 priority non-investment programs lacks transparency, making it difficult to assess their alignment with fiscal constraints and implementation feasibility. To enhance predictability and coherence, the Government should develop transparent selection criteria for annual investment priorities and integrate priority non-investment programs more systematically into budget planning. While the process for selecting non-investment programs should remain distinct from the PIM process, a more structured approach would improve resource allocation and ensure stable financing for critical initiatives.

Project Appraisal

Strengthening the project appraisal process is essential to ensure that prioritized projects are not only strategically aligned but also technically and financially viable. Introducing standardized readiness assessments at both the national and subnational levels would help identify potential implementation challenges early on, such as gaps in feasibility studies, resource availability, or procurement plans. These assessments should evaluate a project's operational readiness, including the completion of preparatory stages, such as technical designs, environmental and social impact assessments, and financial sustainability plans. By integrating readiness assessments into the appraisal process, the government can ensure that only well-prepared projects advance to implementation, thereby reducing delays and maximizing the impact of public investments. Building the capacity of institutions to conduct these assessments will further strengthen the overall effectiveness of Ukraine's PIM system.

Single Project Pipeline

To ensure the effective use of public investment resources, the SPP should be regularly reviewed and updated to reflect evolving recovery and reconstruction and broader development priorities. Projects that remain in the early conceptual stages without progressing through the readiness ranking should be reassessed and, if necessary, removed from the pipeline to ensure that funding and technical support are directed toward feasible and well-prepared initiatives. Establishing a systematic mechanism for periodic review and refinement of the SPP will enhance strategic alignment, improve project implementation rates, and strengthen overall public investment management.

Implementation Capacity

A major challenge for Ukraine's recovery and reconstruction is the capacity to implement the large number of SPP projects effectively. This goes beyond project preparation and includes procurement, contract management, and supply chain development. Limited technical expertise and institutional experience, particularly at the local level, further constrain implementation. The loss of skilled personnel due to displacement or enlistment, combined with the complexity of new public investment processes, has created gaps that require urgent attention. Investments in training, technical assistance, and process standardization—along with digital tools—can help streamline project execution.

Compounding these challenges is the lack of recent data on absorption capacity, making it difficult to assess whether projects can be delivered within the planned timeframe. Without updated information on past project execution rates and bottlenecks, investment planning risks being misaligned with actual implementation capacity. A systematic review of previous budget cycles is needed to identify constraints and ensure that future planning is based on real-time data.

Subnational Government

Decentralization is a cornerstone of Ukraine's governance reform and essential to effective recovery and reconstruction. The capacity gaps in strategic planning, project preparation, and implementation capacity are particularly acute at the subnational government level, notably so in many of the rural hromadas close to the front line. The government will need to build capacity at the subnational level through targeted training programs, technical assistance, and the development of appropriate tools. Local governments' planning and public investment management systems will need to be responsive to locally identified needs and empower communities and local stakeholders, while maintaining alignment with national strategies. This requires close coordination between central and subnational governments through planning and implementation. Given the scale of the challenge, external partners are expected to play an important role in the delivery of capacity development at the regional and local level. Government-led coordination and harmonization of these capacity development efforts will be critical to avoid fragmentation and ensure that the national planning and PIM systems function effectively across the national territory. MDCT will play an important leadership and regulatory role in this process.

Private Sector

Private financing should be integrated into Ukraine's PIM architecture as an essential funding source in addition to constrained government and donor resources. While the GoU has expressed its commitment to expanding private participation in financing and delivering infrastructure, necessary reforms in certain sectors may require time to take effect. Additionally, the preparation of PPP projects, particularly complex ones, may extend beyond the immediate recovery timeline. Nevertheless, aligning with the principle of private sector engagement in Ukraine's recovery and reconstruction, the SPP and broader PIM system—including tools such as the PPU and PPFs— should be leveraged to identify and facilitate projects suitable for private sector involvement. This includes prioritizing the development of PPPs in key sectors, such as energy and transport, and embedding these opportunities within sectoral recovery and reconstruction strategies. To maximize the effectiveness of PPP initiatives, coordinated efforts should continue to strengthen the capacity of central and local governments to design and implement PPPs. These efforts should also explore innovative de-risking mechanisms tailored to Ukraine's current needs to ensure that projects remain attractive to private investors while addressing critical recovery priorities.

The significant funding gaps across budgeted projects highlight the importance of developing innovative financing mechanisms. New sources of long-term private capital will need to be mobilized, both external (including FDI) and domestically. Developing instruments for this purpose will require resources and a clear strategy is needed to prioritize those with the highest potential. Enhanced coordination with donors is also essential to minimize duplication and ensure that funding is allocated to projects with the highest socio-economic impact. These steps will be critical for addressing the average funding shortfall of 31.6 percent across budgeted projects.

MACROECONOMIC IMPACTS

Recent Economic Developments

The invasion continues to negatively affect Ukraine's economy through (i) continuous damage to productive capital (which reduces Ukraine's economic potential), and (ii) disruption of economic processes (which reduces the extent to which Ukraine can utilize its full economic potential). After a 28.8 percent economic decline in 2022, Ukraine's economy posted 5.5 percent growth in 2023, supported by a good harvest and the gradual removal of logistical bottlenecks. The reopening of the Black Sea corridor in late 2023 facilitated better capacity utilization in metals and mining and reduced the output gap. Economic growth remained at 5 percent in the first half of 2024 (6.5 percent in Q1 and 3.7 percent in Q2). However, attacks on energy infrastructure, which began in May 2024, led to energy shortages and disrupted economic activities in the second half of the year. Thanks to government efforts to rapidly repair energy infrastructure and to increase electricity imports, an economic contraction was avoided, but gross domestic product (GDP) growth slowed to 2 percent year-over-year in Q3 2024, with full-year GDP growth estimated at 3.2 percent. The services sector remained relatively resilient, with domestic trade bolstered by strong private and public consumption. A revival in construction, particularly in housing, also contributed to growth.

Defense spending remains Ukraine's main fiscal deficit driver, as prolonged hostilities necessitated a budget revision in late 2024. In 2023, Ukraine's defense spending accounted for 32 percent of GDP, contributing to total general government expenditure[66] of 73 percent of GDP and a fiscal deficit (excluding grants) of 26 percent of GDP. A similar pattern emerged in 2024, with defense spending reaching UAH 1.3 trillion by the end of August, 6 percent more than in the same period in 2023. As the original budget for 2024 had assumed a more moderate expenditure path, a budget revision became necessary in September, which increased expenditure by UAH 450 billion. The increased expenditure was covered by a combination of domestic and external borrowing. Defense expenditure stood at UAH 1.9 trillion in 2024 (6 percent more than in 2023), with total general government expenditure estimated at UAH 5.3 trillion for the whole year (or 8 percent more than in 2023).

External concessional loans remain the main mechanism used to cover fiscal financing needs. In 2024, Ukraine had fiscal financing needs to cover its fiscal deficit and debt repayments amounting to US$57.5 billion. These needs were met through US$41.7 billion of external support: international partners provided Ukraine with the equivalent of about US$12.6 billion (7 percent of estimated GDP) in grants and almost US$29.1 billion (15 percent of estimated GDP) in loans. Domestic borrowing in local and foreign currency provided the remaining equivalent of US$15.8 billion (or 8 percent of estimated GDP) in financing.

The current account deficit widened by 37 percent year-on-year in January–November 2024, reaching US$13.9 billion. This was driven by a decline in remittances and secondary income. Specifically, the foreign trade deficit remained high at around US$31.4 billion (about 16 percent of full-year GDP) in the first 11 months of 2024, while the surpluses of primary and secondary income declined compared to 2023. The primary income surplus was negatively impacted by lower remittances from work migrants, which

[66] IMF definition. For Ukraine it consolidates state budget, local budgets, and the budget of the Pension Fund.

reached US$8.8 billion by the end of November 2024 (US$1.6 billion less than at the same period one year earlier), and by higher dividend outflows, which increased by US$1.4 billion compared to the first 11 months of 2023. The latter follows recent measures taken by the central bank to liberalize foreign exchange transactions. The secondary income surplus decreased due to a decline in external grant assistance. The current account deficit was covered by proceeds from external loans. These also helped Ukraine's international reserves reach a record high of US$43.8 billion as of January 1, 2025 (equivalent to 5.5 months of future imports).

Renewed inflationary pressures led to a new round of monetary policy tightening at the end of 2024. Monetary policy remained restrictive throughout 2023, which helped stabilize the foreign exchange market and control inflation. Inflation declined from 26.6 percent year-over-year in December 2022 to 3.2 percent year-over-year in April 2024, driven by high domestic food output and the maintenance of fixed energy tariffs. This allowed the National Bank of Ukraine (NBU) to gradually reduce the key rate and soften its foreign exchange controls. In September 2024, the NBU Council adopted new monetary policy guidelines that reintroduced flexible inflation targeting, albeit with a longer horizon than before February 2022. The NBU now aims to return to the 5 percent inflation target within three years, compared to the previous 9 to 18 months. At the same time, currency depreciation and higher energy tariffs, combined with an increase in food prices due to a weaker harvest and rising wages due to labor shortages, led to rising inflation later in the year. At the end of 2024, consumer prices had increased by 12 percent year-over-year. The NBU responded to the growing inflationary pressures by increasing the key interest rate to 13.5 percent in December.

Recent Poverty and Equity Developments

With official data sources unavailable due to restrictions on statistics during martial law, other sources were used to estimate poverty rates for 2023 and 2024; these sources show that rates are now much higher than before February 2022. The last official poverty rate reported by the Ukrainian government was in 2021, when the rate was 20.6 percent based on the official actual minimum subsistence threshold of UAH 4,311 per adult equivalent per month. Microsimulations using data from the World Bank's Listening to Ukraine (L2UKR) surveys[67] yield a poverty rate of 34.0 percent in 2023, based on the official actual minimum subsistence threshold of UAH 6,166 per adult equivalent. Concurrently, the National Academy of Sciences (NAS) of Ukraine[68] reported poverty rates of 35.5 percent in 2023. Geographically, results from NAS show poverty rates are higher in rural areas, while Kyiv's poverty rate (14.1 percent) was less than half of the national average. Results of the World Bank's microsimulations show very high 2023 poverty rates (66.8 percent) in regions temporarily not under government control.

[67] The World Bank's Listening to Ukraine phone survey interviewed 1,500–2,000 households per month between April 2023 and December 2024 (excluding September 2024). Respondents are contacted via random digit dialing (RDD), and conducted in all areas excluding Autonomous Republic of Crimea and Luhanska oblast.

[68] The NAS Institute for Demography and Life Quality Problems conducts the Household Socio-Economic Status Survey with UNICEF financing support. The relevant survey was conducted between December 2023 and February 2024. See Liudmyla Cherenko, "Measuring Poverty in the Conditions of War in Ukraine," Working Paper 1, Economic Commission for Europe Conference of European Statisticians, Workshop on Harmonization of Poverty Statistics, Geneva, November 27, 2024, Link.

In 2024, preliminary simulations using L2UKR data showed a small change in the poverty rate, to 35.8 percent, based on an actual minimum subsistence threshold of UAH 6,892.[69] Based on L2UKR, the proportion of households receiving wage income in 2024—about half of households interviewed—is relatively stable since 2023. Official statistics reported that nominal wages among employees in enterprises grew 13 percent between 2023 and 2024; however, these statistics exclude agriculture and informal labor (State Statistics Service of Ukraine). A report from Ministry of Economy reports 20.3 percent nominal growth in average wages in 2024. The International Organization for Migration (IOM) reported wages being 33 percent higher in August 2024 than in June 2023, based on the IOM General Population Survey. The World Bank's L2UKR surveys also saw an increase in reported household wages. In Q2 2023, average monthly household wages were about 15,600, rising to nearly 24,000 in October 2024. Pensions are the most common source of household income, received by about 60 percent of households interviewed in October and November 2024. However, pension income is much lower than wage income; average pension income per household is about UAH 7,000 per month. Average social assistance benefits per household are less than UAH 4,000 per month, much lower than pensions. Receipt of social assistance peaked in Q1 2024 at 26.7 percent of households and dropped to 13.6 percent of households in Q4 2024. A look at changes by program shows that Housing and Utilities Subsidy (HUS) and IDP support dropped in later 2024, while other programs have smaller coverage.

However, income and wage trends vary by geography. By region, the central region (inclusive of Kyiv) has the highest rate of households with wage income. However, in the regions currently not under government control, employment rates are approximately 10 percentage points lower than the national average, suggesting higher poverty rates in these areas. Regional disparities and widening inequality may result from differences.

Macroeconomic Outlook

Under the baseline scenario that assumes that active hostilities will continue throughout 2025, economic growth is projected to decelerate to 2 percent year-over-year. This slowdown reflects the closing of the output gap, which reduces opportunities for rapid growth acceleration, and the prolonged war, which exacerbates labor, energy, and other input shortages. Consequently, growth drivers other than consumption-driven retail trade and government-financed demand are expected to be limited. Starting in 2026, Ukraine's economic growth is projected to accelerate to 7 percent under the baseline assumption of a transition to a peacetime economy by end-2025. This transition is anticipated to shift expenditure from consumption toward investments in reconstruction and productive capacity. On the supply side, this shift is expected to benefit the manufacturing and construction sectors, with modest growth projected for agriculture.

The fiscal deficit is expected to remain above 20 percent in 2025 and to stay above pre-war levels in the medium term due to persistent spending pressures. Elevated expenditures will be driven by ongoing needs, while the revenue base is expected to remain comparable to 2024. From 2026 onward, the fiscal deficit is projected to narrow, assuming conditions allow for a significant reduction in military spending.

[69] The actual minimum subsistence line in 2024 is 11.7 percent higher than in 2023. The figure is the average between January and November 2024; December's monthly threshold has not yet been published.

By 2027, goods and services and wage spending are projected to decline by approximately 10 percentage points of GDP compared to 2023. Nevertheless, the deficit is likely to remain above 2021 levels in the medium term due to increased capital expenditures.

Ukraine's fiscal needs for 2025 are estimated to be met through a combination of Extraordinary Revenue Acceleration (ERA) financing, the Ukraine Facility, and the IMF program. Total fiscal needs for 2025 are projected at US$39.3 billion. The coalition of international donors supporting Ukraine has provided financing assurances until the conclusion of the ongoing IMF program in 2027. By the end of 2024, Ukraine had already received €3 billion from the EU's commitment of €18.1 billion under the G7's US$50 billion ERA package, with a further US$1 billion from other sources, signed an agreement for US$15 billion in financing from the United States' ERA contribution, and a Memorandum of Understanding covering the US$20 billion of the EU's contribution. The latter is expected to be disbursed in instalments by the end of 2025. The remaining funds are expected from the EU's Ukraine Facility and the IMF.

Policy Recommendations

Despite these challenges, Ukraine has maintained macroeconomic stability while advancing its EU accession agenda. Ukrainian authorities have not only preserved stability but also made significant strides in their reform efforts, culminating in the formal opening of EU accession negotiations in June 2024. Achieving EU membership will require demonstrating a functioning market economy and the capacity to compete within the EU. With GDP per capita at just 22 percent of the EU average—far below that of recent accession countries—accelerating economic growth is a pressing priority.

Restoring economic growth is essential for EU accession, debt sustainability, and social stability. EU membership requires not only alignment with the EU *acquis* but also income convergence with member states, which sustained growth can help achieve. Additionally, much of the substantial donor support received by Ukraine since February 2022 has been in the form of loans. Even concessional loans will need repayment, meaning Ukraine must grow by at least 5 percent annually to service its debt sustainably. Growth is also vital to prevent further population outflows, as failing to increase economic opportunities will drive more citizens to leave the country.

The prolonged war intensifies macroeconomic challenges that require balanced solutions. High military expenditures and reconstruction needs should be reconciled with the need to increase domestic revenue and maintain growth momentum. Ukraine needs to boost its external competitiveness by allowing some currency depreciation while keeping inflation under control. Addressing these challenges demands targeted policies, such as tax reforms to enhance efficiency and strategic use of foreign exchange reserves to support reconstruction and recovery.

Balancing stability with long-term growth requires targeted reforms in three key areas. First, Ukraine should implement reforms that address resource misallocation and enhance productivity by leveraging economic shifts and transformations. Second, the country should fully harness the benefits of EU integration by expanding access to European markets and facilitating participation in global value chains. Third, it is essential to strengthen economic institutions, with a focus on fostering accountability, transparency, and merit-based systems.

HUMAN IMPACT ASSESSMENT

Russia's invasion of Ukraine has provoked an unprecedented humanitarian crisis. It has not only created new challenges for various groups of people in Ukraine, but has also exacerbated preexisting issues, especially for vulnerable groups. This chapter provides a succinct overview of the specific issues faced by older persons, persons with disabilities, displaced persons and returnees, war veterans and their families, and youth, and looks as well at gender-related impacts. It also highlights the intersectionality of vulnerabilities and overarching challenges that adversely affect the groups considered. Access to adequate housing, stable and secure employment, and social support are among central cross-cutting problems.

Tackling these issues requires both comprehensive national policies as well as local and regional interventions. The decentralization reforms, as well as the ongoing reforms to the health care system, secondary education, and social services, present local governments with both significant challenges and new opportunities to implement local strategies within these fields and address the war-related crises.

***Invest in social services, including infrastructure for social services provision*.** Beyond the support for cash benefits, there is a need to invest in the social services infrastructure, including community-led centers for social services provision, war veteran development centers, and other types of community centers that might cater to the population's diverse needs. For instance, investments in war veteran development centers can provide retraining and new skills for education and employment, and investments in Ukrainian Veterans Foundation programs will allow war veterans to develop their businesses. There is also a need to supply centers that provide social services with the necessary equipment, including equipment for transportation. Finally, beyond the investment in infrastructure and war veterans reskilling programs, there is a need to increase support for social workers and promote their professional development, in part to ensure they have the necessary equipment and are adequately remunerated for their work.

***Invest in capacity-building programs for municipalities to ensure they can provide adequate social support*.** Local governments are key to delivering social services, housing, education, and health care. They are able to obtain and process information on populations' needs faster than the higher tiers of government. Nonetheless, they might require additional administrative support to implement ongoing reforms. There is thus a need to invest in training and capacity-building programs for municipalities, and to design locally specific capacity-building programs—that is, programs tailored to the context and needs of different municipalities. Such programs must account for region-specific challenges and needs and must also be aligned with national and regional policies and regional development strategies.

Invest in social housing to ensure the well-being of various social groups. Access to adequate housing continues to pose a significant challenge for different vulnerable groups, as reviewed in this chapter. Each group might have specific housing-related needs, including the need for housing suitable for assisted living or other types of social services; but most housing-related needs of most groups could be met through social housing aligned with the principles of adequate housing. Finally, the development of the social

housing system could help meet the prewar backlog of housing needs. Developing such a system would require changes to the existing legislation and drafting of a National Housing Strategy.

***Continue to invest in data collection systems to aid recovery*.** The highest priorities for improved data availability include (i) monitoring and verification of IDP status; (ii) sex-disaggregated data related to gender impacts in the infrastructure, social services, health, and employment/livelihoods sectors; (iii) socially disaggregated data on employment and pension provision; (iv) digitized registry of war veterans and their needs; and (v) data on number and legal status of older persons and people with disabilities living in residential care facilities. Equally important is aligning statistical and administrative data collection and dissemination with Ukraine's decentralization reform so that communities have access to socially disaggregated data needed for operational and strategic planning.

Displaced Persons and Returnees

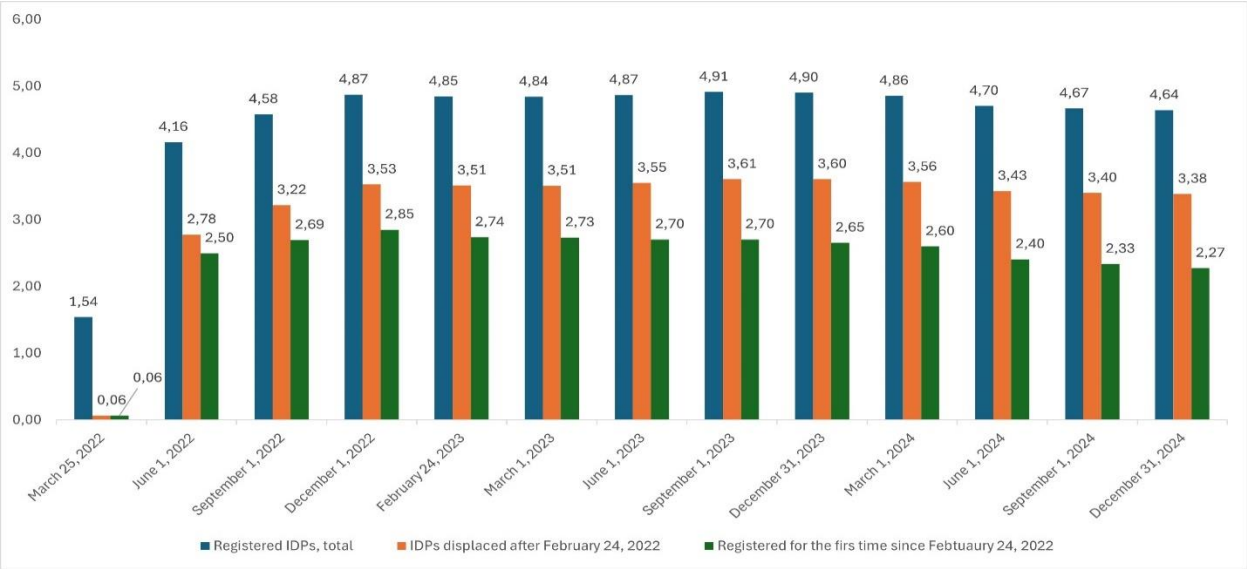
Summary

Millions of people have had to leave their homes. The International Organization for Migration (IOM) identified approximately 3.6 million de facto[70] internally displaced persons (IDPs) in Ukraine,[71] or almost 5 percent of the world's internally displaced population[72] and the seventh largest internal displacement situation worldwide.[73] The number of individuals officially registered as IDPs with the Ministry of Social Policy (MoSP) reached 4,642,735 as of December 31, 2024 (

Figure 32). Moreover, approximately 6,785,900 Ukrainians remain displaced outside of Ukraine.[74] The share of IDPs was highest in May 2022, comprising approximately 16.5 percent of the population, and declined to 12.4 percent in May 2023. Between September and October 2024, the share of IDPs remained relatively stable at 11.3 percent.[75] Approximately 4,294,000 individuals have reportedly returned to their habitual residence in Ukraine following displacement within or outside Ukraine of a minimum of two weeks since February 2022. Of those, 26 percent returned from abroad, while 74 percent returned from displacement within Ukraine.[76] Reporting by the UN Refugee Agency (UNHCR) in November 2024 indicated that 73 percent of IDPs plan or hope to return to their homes one day; 11 percent are undecided about their future pathway; and 16 percent do not intend to return and aim to integrate locally or elsewhere in Ukraine. Among refugees, 61 percent plan or hope to return one day, 27 percent are undecided about their future plans, and 12 percent say they have no current intention to return.[77]

[70] De facto IDPs refer to people who are displaced but may not be formally registered as such. IOM's methodology focuses on including these individuals by using surveys that capture unregistered displaced populations in addition to the officially registered IDPs.
[71] IOM DTM, "Ukraine—Internal Displacement Report—General Population Survey, Round 18," October 2024, Link.
[72] Internally displaced people and those displaced outside of Ukraine are a heterogeneous group of individuals with different socioeconomic backgrounds. Across all groups, displacement negatively impacts personal well-being and aggravates preexisting vulnerabilities such as old age or disability.
[73] UNHCR, "Mid-year Trends 2024," Link.
[74] UNHCR Operational Data Portal, "Ukraine Refugee Situation," citing statistics made available by the authorities, November 18, 2024, Link.
[75] IOM DTM, "Ukraine—Internal Displacement Report—General Population Survey, Round 18," October 2024, Link.
[76] Ibid.
[77] UNHCR, "Lives on Hold: Intentions and Perspectives of Refugees, Refugee Returnees and Internally Displaced People from Ukraine," Regional Intentions Report #6, November 2024, Link.

Figure 32. Number of registered IDPs in Ukraine, March 25–December 31, 2024 (million) [4,642,735]



Source: Ministry of Social Policy of Ukraine, "Dynamics of Key Indicators That Characterize the State of Registration, Re-registration and Record Keeping of Internally Displaced Persons for the Period of Martial Law." Note: data in million.

Observed Impacts

Modifications to the cash assistance program for internally displaced persons are affecting IDPs' socioeconomic well-being. Within months since February 24, 2022, all registered IDPs were eligible to receive a monthly living allowance. However, in March 2024, the revised eligibility criteria, including stricter means tests and employment and vulnerability criteria, came into force.[78] According to the MoSP, UAH 40.1 billion (equivalent to US$0.95 billion) was provided in 2024 to finance IDPs' living allowance; the total since February 2022 is over UAH 162 billion (US$3.8 billion). The rationale for recent policy changes is to increase the financial sustainability of the benefits by limiting the program's coverage and targeting the most vulnerable.

Limiting the program's scope might have significant implications for IDP households' overall well-being and financial security. Prior to these policy changes, approximately a quarter of IDPs reported cash assistance as their primary source of income. As of November 2024, the share was approximately 10 percent.[79] This sharp decrease does not reflect an improvement in the IDPs' economic conditions but rather the policy change that narrows the benefit eligibility criteria. The State Employment Service also reports that the number of applications received from IDPs was highest in March 2024, reaching 17,050 individuals; 12,903 applicants were given an unemployment status. Specific risks emanating from this

[78] Under government decisions in 2023–2024, the payment of a living allowance was extended for two more six-month periods. The extension of the payment takes into account the above criteria and the total income per family, which is not to exceed four times the subsistence minimum for persons who have lost their ability to work, as of January 1 of the year, per person (UAH 9,444). The payment was also extended to the most vulnerable categories of citizens. In addition, to stimulate employment among persons of working age, mechanisms were applied to promote registration in employment centers for job search, retraining, starting a business, etc.

[79] IOM DTM, "Ukraine—Income, Social Protection, and Coping Strategies in Ukraine," November 2024, Link.

policy shift include risks of returns to unsafe areas, eviction and resort to moving to collective sites, and inability to cover basic needs and ensuing negative coping strategies.[80]

The GoU continues to provide subsidies for employing displaced persons and has increased the duration of such support.[81] In addition, on April 1, 2024, the subsidy amount increased to UAH 8,000 (US$192). In 2024, the State Employment Service ensured employment for 38,000 IDPs, compared to 30,000 in 2023; of those, approximately 13,000 were employed with their employer receiving the compensation of their wages for the duration of the martial law and 1,000 were employed under fixed-term contracts with expenses for wages compensated for the employer. The subsidy aims to provide employers with additional incentives to hire internally displaced workers.

Nevertheless, access to stable and secure employment remains among the central challenge for IDPs and is a barrier to a durable solution to their displacement.[82] The ongoing war has perpetuated the changes in the labor market and led to a sharp rise in unemployment. The challenge of finding work is particularly salient for IDPs. IDPs are less reliant on stable salaries as the main source of income than nondisplaced people, making them particularly vulnerable.[83] According to the GoU, the share of IDPs among the registered unemployed has increased, and was 17.3 percent in 2024 compared to 8.9 percent in 2023. Even people with a stable income might not have enough to cover basic needs.[84] For instance, approximately a quarter of the IDPs eligible for cash assistance report salary as the primary source of income.[85]

Seeking stable employment is particularly difficult for female-headed IDP households with children. The schooling issues exacerbate employment challenges. As noted in the RDNA3, some preschools in host communities struggle to absorb IDPs' children, thus making families, and mainly mothers, solely responsible for children. This situation is a particular challenge for female-headed IDP households, who may be unable to rely on informal social and family networks for support. Moreover, women IDPs with children might struggle to adhere to strict working schedules and could require paid or unpaid help with childcare. To mitigate this challenge, the GoU provides cash assistance for IDPs with children. The planned spending for the program in 2025 is UAH 576 million.[86]

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[80] UNHCR/Protection Cluster, "Update on Changes in Payment of IDP Allowance (CMU Resolution #332)," May 2024, Link.

[81] The duration has increased from two to three months for employing IDPs and to as much as six months for employing IDPs with disability.

[82] UNHCR, "Lives on Hold: Intentions and Perspectives of Refugees, Refugee Returnees and Internally Displaced People from Ukraine," Regional Intentions Report #6, November 2024, Link.

[83] "They [IDPs] were also far more likely to be unemployed but seeking work (16 percent, compared with 6 percent of the non-displaced) and less likely to have a regular salary as a main source of income (37 percent, compared with 52 percent of the non-displaced)." IOM DTM, "Ukraine Housing Brief: Living Conditions, Rental Costs and Mobility Factors," July 2024, Link.

[84] According to the IOM: "Approximately 45 percent of IDPs report being employed while 7 percent are self-employed, compared to 57 percent and 9 percent in the population overall. An estimated 16 percent of IDPs are unemployed and actively seeking work compared to 8 percent of the general population." IOM, "Тематичний бриф: Економічна стійкість під час війни. Доходи, зайнятість та соціальна допомога в Україні" [Economic Sustainability During War: Income, Employment and Social Aid in Ukraine], April 2024, Link.

[85] IOM DTM, "Ukraine—Income, Social Protection, and Coping Strategies in Ukraine," November 2024, Link.

[86] The GoU adopted Resolution No. 664, dated June 7, 2024, "Some Issues of Reimbursement of the Cost of the Child Care Service 'Municipal Nanny' for the Period of Martial Law and within Three Months after Its Termination or Cancellation." Under this resolution, the program was expanded to include children under three years of age of internally displaced persons (who do not

Russia's invasion of Ukraine has also exacerbated the need for social services and support among IDPs. According to a report by the NGO Centre for Society Research (Cedos), the number of IDPs receiving social services has increased since February 2022.[87] The increased demand for social services—especially emergency support and continuous care services for older persons or persons with disabilities (groups that constitute large shares of Ukraine's internally displaced population) — has placed a significant strain on the local governments responsible for providing them. This strain has been increased by shortages in the social services workforce, estimated by the MoSP at 33,000 social workers. Also contributing to this strain is the limited capacity for providing some of the newer social services in the state's catalog, such as assisted living or social adaptation. The demand for such services has significantly increased given the IDPs' demographic profile.

Access to adequate and affordable housing remains one of the critical needs for internally displaced people. Recent reports indicate that housing has generally become less affordable and that increased housing costs overburden in Ukraine. Rising rents combined with stagnating wages have led to disproportionately high housing expenses. Cedos survey data indicate that approximately 42 percent of people spend more than 30 percent of their household monthly income on housing, including rent and utilities payments.[88] Recent information shows that in cities such as Kyiv, Lviv, or Uzhhorod, rent for a one-bedroom apartment might amount to 68–80 percent of the average salary.[89] According to IOM, approximately a third of renters spend more than 70 percent of their income on housing, while half of those spend 50 percent of their income on rent and utilities.[90]

The housing situation is especially challenging for IDPs, whose financial situation is more precarious than that of the rest of the population. Most of the internally displaced continue to rent accommodation in the private sector. Overall, internally displaced people report worse housing conditions than the rest of the population—for instance, living in poor-quality housing and experiencing tenure insecurity (including lack of rent contracts and fear of eviction).[91] Moreover, IDPs are more likely than the rest of the population to adopt crisis coping strategies, such as skipping rent payments or moving into lower-quality housing.

The availability of adequate and affordable housing shapes the mobility patterns of internally displaced persons, determining whether they stay, move to another locality, or return. Access to housing remains a significant "push and pull" factor for the IDPs.[92] Among returnees, approximately 20 percent claim they

have serious illnesses); children with serious illnesses under the age of three (formerly children under six who need additional care); children under three (formerly under six) whose parent is a person with a disability of Group I or II; and children under six who live in administrative-territorial units where it is impossible to ensure the functioning of preschool education institutions (e.g., the territories of Zaporizka, Donetska, Kharkivska, Khersonska, Sumska, and Chernihivska regions).

[87] Cedos, "Дослідження з питань соціального захисту та соціальних прав в Україні: задоволеність соціальними послугами" [Study on Social Protection and Social Rights in Ukraine: Satisfaction with Social Services], March 29, 2024, Link.

[88] Cedos, "Housing and ResidentialConditions in Ukraine: Survey Results", 2024, Link.

[89] Work.ua, "Half the Salary for Rent: LUN and Work.ua Researched the Cost of Housing in Ukraine," November 22, 2024, Link.

[90] IOM DTM, "Ukraine Housing Brief: Living Conditions, Rental Costs and Mobility Factors," July 2024, Link.

[91] Ibid., 4–8.

[92] Ibid.

returned because of the financial strain and high housing costs in the area of displacement.[93] Overall, the lack of affordable and accessible housing undermines recovery and integration efforts.[94]

IDPs residing in collective sites[95] constitute a particularly vulnerable subset. According to the Ministry of National Unity,[96] 1,079 collective sites across Ukraine accommodated 61,063[97] people as of December 2024.[98] Older IDPs and those with disabilities are more likely to stay beyond the six months of the initial contract for residence at the collective site. Reliance on collective sites as an accommodation of last resort thus compounds various layers of vulnerability. IDPs living in collective sites more often rely on some form of social benefit as their main source of income than the general IDP population and overall population of Ukraine. The majority of people residing in collective sites rely on IDP allowance (76 percent), another state social benefit (65 percent), or old-age or military pension (51 percent); only a third (33 percent) rely on wages as the primary source of income.[99] Overall, IDPs in collective sites have a greater reliance on state social assistance than other IDPs or non-displaced populations and are less likely to engage in salaried work.[100]

In an attempt to mitigate a housing crisis made worse by the invasion, the MoSP introduced a rent subsidy for IDP households spending more than a third of their monthly income on rent. At first, the subsidy was planned to be implemented in nine pilot regions where most of the internally displaced persons had moved: Chernihivska, Sumska, Kharkivska, Zaporizhska, Mykolaivska, Dnipropetrovska, Khersonska, Luhanska, and Donetska regions.[101] MoSP's ambition is to extend the program's coverage to the entire GoU-controlled territory of Ukraine. The GoU envisions spending approximately UAH 3.4 billion to finance the program, and the MoSP plans to increase the volume of expenditures in this area to UAH 5.6 billion. Landlords participating in the program and willing to sign a lease agreement would be eligible for tax exemption.[102] While rent subsidies might be an efficient instrument to provide emergency support for vulnerable households, they have certain long-term limitations. For instance, cash-for-rent programs might not be able to solve the intrinsic tenure insecurity of the private rental sector. According to the IOM, most IDPs lack documents for their tenure status, and approximately 16 percent of displaced tenants have faced evictions since February 2022.[103] Hence providing subsidies for unscrupulous landlords might only exacerbate tenants' vulnerability and deepen housing insecurity.

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[93] "As two-thirds of returnees reported owning their houses, not having to pay rent in their area of displacement was a factor in their decision to return, cited by 14 percent of returnee respondents." Ibid., 7.

[94] RMIT, Cedos, New Housing Policy, and Housing Europe, "Ukraine's Social Housing: A Rapid Evidence Summary—Towards a Strategic Investment Approach," September 2023, Link.

[95] The term "collective site" covers a wide range of temporary housing, including student dormitories, institutions for older persons and persons with disabilities, orphanages, shelters for homeless people, sanatoriums, hotels, refurbished educational facilities, etc.

[96] Formerly the Ministry of Reintegration of the Temporarily Occupied Territories.

[97] Approximately 1.3 percent of the total IDPs that are registered.

[98] The total capacity, according to the Ministry of National Unity, is 74,055 people.

[99] CCCM Cluster, Protection Cluster, and REACH, "Vulnerabilities in Collective Sites: Addressing Gaps in Service Provision and Identifying Solutions," November 2024, Link.

[100] Ibid.

[101] Certain areas that are the site of hostilities or that are temporarily not under government control are excluded.

[102] Public funds will be used to compensate the landlord for the cost of taxes to be paid on rental income in an amount proportional to the amount of the subsidy.

[103] IOM DTM, "Ukraine Housing Brief: Living Conditions, Rental Costs and Mobility Factors," July 2024, Link.

Recovery and Reconstruction Needs, including Build Back Better

Evaluate the efficiency and adequacy of the cash assistance program for IDPs to better understand the outcomes and impacts of the recent policy changes. Given the revisions in the eligibility criteria for the IDPs' living allowance, there is now a risk that the program will exclude vulnerable people needing financial support. The risk is particularly acute for those IDPs hovering just above the eligibility threshold. Those classified as ineligible could still require financial support for necessities. The program's outreach and coverage should be comprehensively assessed to ensure that the benefit still covers people who most need assistance. In addition, the IDP allowance program should be examined for its interlinkages with other state social assistance, to enable earlier transition, where applicable, to regular social protection programs.

Invest in social and affordable housing to ensure the well-being of internally displaced persons. Adequate housing is a prerequisite for the return of refugees and IDPs or other form of durable solution for them. Moreover, social housing is central to ensuring the transition of IDPs from collective temporary sites into long-term and secure housing. According to the Ukraine Plan, the "build back better" principle entails policies that support the development of the affordable, accessible and sustainable social housing sector.[104] There is thus a need to support investment projects to construct affordable and sustainable social housing nationwide or to transform available premises into social housing. The new framework law on housing and dedicated legislation on social housing to establish inter alia the legal framework for local authorities and municipal companies for the provision and management of social housing is critical. There is also a need to support capacity-building programs for local governments to ensure they have the skills and knowledge to provide and maintain such a sector. Furthermore, under recently adopted Law 11281, which provides for a nationwide inventory of properties that can be used for IDPs' housing, there is an opportunity to make use of available properties to address the housing crisis. Finally, there is a need to draft a comprehensive National housing strategy and support the related reforms avoid fragmentation of policy measures to guarantee that housing reform aligns with the best European housing practices and conforms to the principles of adequate housing.

Invest in social services tailored to specific demographic profiles to support those most vulnerable among the displaced. This action requires investments in the capacity of social services to provide services tailored to the needs of older persons, persons with disabilities, and single-headed households in particular. It should include a review or potential expansion of existing service models and an exploration of new ones to enable greater systems capacity. Ensuring that social adaptation and day care services are evenly distributed throughout the community is also important in order to reduce access barriers and commuting times.[105]

Provide and scale up re-qualification and vocational training to reduce barriers to employment and increase IDPs' inclusion in socioeconomic life. As pointed out in previous reports, re-qualification and vocational training can serve as a pathway toward socioeconomic development, provided it is offered at the local level, including in urban and rural areas, and is tailored to the needs of both hosting communities

[104] Ukraine Facility, "Ukraine Plan 2024–2027," Link.

[105] Cedos, "Дослідження з питань соціального захисту та соціальних прав в Україні: задоволеність соціальними послугами" [Study on Social Protection and Social Rights in Ukraine: Satisfaction with Social Services], March 29, 2024, Link.

and IDPs themselves. Such programs should focus on sectors experiencing labor shortages or having high growth potential in Ukraine's postwar economy. Targeted financial support, such as grants for small businesses or entrepreneurship programs, can further enable IDPs' socioeconomic inclusion. The state employment strategy and IDP employment strategy, currently under development, should address existing barriers and facilitate the economic reintegration of IDPs.

Older Persons

Summary

Older persons are among the most vulnerable of the groups whose livelihoods are disproportionately affected. They are also one of the largest groups among Ukraine's internally displaced population. Overall, the war has caused a decline in older persons' well-being by deteriorating their rights to health (including mental health), social security, and adequate housing.

Observed Impacts

Older persons continue to face major security risks because they are less likely than others to evacuate their homes.[106] Older persons are often among the last to leave their homes, since displacement could mean losing most of their social safety net, often composed of a home, personal assets, a pension, and a social network. Older persons are among the civilians who are disproportionately injured and killed.[107] For instance, of 183 civilians killed in October 2024, 45 percent were older than 60 years.[108] According to CARE International, older people constitute at least a quarter of the population living within 25 km of the front line.[109] Older persons remaining in proximity to the frontline face additional challenges accessing medical and social services. Moreover, the escalation of hostilities near the front line in 2024 only heightened the need for humanitarian and social assistance.[110] According to the MoSP, some older persons with transportation and continuous care needs are unable to leave frontline areas.

Impoverishment and economic hardships exacerbated by the invasion continue to be among the central problems encountered by older persons. Because the majority of older persons rely on old-age pensions as their primary source of income, they are particularly dependent either on formal or informal social safety nets and assistance. Internal displacement usually disrupts such safety nets and support and further increases the risks older persons face. As of December 2024, the minimum social pension per month was UAH 2,361 (US$56); this constitutes the subsistence minimum for people who have lost their ability to work. Nonetheless, the pension amount is insufficient to secure a decent standard of living, including

[106] Amnesty International, "Ukraine: 'They Live in the Dark': Older People's Isolation and Inadequate Access to Housing amid Russia's Invasion of Ukraine," December 1, 2023, Link.
[107] United Nations Human Rights Office of the High Commissioner, "40th Periodic Report on the Human Rights Situation in Ukraine: Treatment of Prisoners of War and Update on the Human Rights Situation 1 June to 31 August 2024," October 1, 2024, Link.
[108] Human Rights Monitoring Mission in Ukraine, "Protection of Civilians in Armed Conflict—October 2024," Link.
[109] CARE International, "Ukraine: Older People Are Increasingly at Risk," September 30, 2024, Link.
[110] Human Rights Monitoring Mission in Ukraine, "Protection of Civilians in Armed Conflict—October 2024." Link.

access to adequate housing. According to the IOM, households with older people often deploy crisis coping strategies to satisfy basic needs.[111]

Housing vulnerability is particularly acute among older persons. Due to their precarious economic situations, older people are more at risk than younger peers of experiencing housing insecurity. Unaffordable housing forces older people to deploy negative coping strategies, such as reducing their expenditures on essentials such as food in order to pay for housing. Older people who reside in rented housing are particularly vulnerable; approximately 91 percent of older tenants spend more than a third of their monthly income on housing, and 51 percent spend more than half of their income on rent and utilities.[112]

The need for adequate housing is especially pressing for displaced older persons. The estimated share of older persons among all IDPs ranges from 25 percent[113] to 28 percent.[114] Most IDPs rent in the private sector, but a significant share of older people cannot afford to do so.[115] As a result, older persons tend to resort to living in collective sites, an accommodation option of last resort. They also tend to remain in collective sites for prolonged periods and comprise a large proportion of the temporary shelter residents.[116] For these reasons, the war-induced housing crisis, including rising rents and lack of affordable and social housing, has a particularly negative effect on older persons. Overall, displacement aggravates old age–related vulnerabilities, including disability or chronic illness, thus making older persons susceptible to housing insecurity.

Recovery and Reconstruction Needs, including Build Back Better

Build the capacity of social service providers and design a new service provision model for social services tailored to the needs of older people, including assisted living, home-based care, facility-based care, or social adaptation. There is a need to offer critical social services across the country in a way that is coherent and that aligns with the government's deinstitutionalization agenda, and this will require addressing the significant shortage in local premises for social services provision.

Strengthen community-based psychosocial interventions tailored to older persons. This effort should include older person disassociated from their usual social environment due to displacement, with the goal of enhancing their overall well-being and capacity for social adaptation and integration.

Invest in a system of social housing sensitive to the needs of older people to ensure a long-term and sustainable solution to housing vulnerability. Older persons remain particularly vulnerable to tenure

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[111] IOM DTM, "Ukraine—Income, Social Protection, and Coping Strategies in Ukraine," November 2024, Link. In addition, "more than half of respondents who lived in households composed of women and children only (56 percent) or including at least one older person (54 percent) reported that their household had used stress or crisis coping strategies during the 30 days prior to data collection."

[112] Cedos, "Housing and Residential Conditions in Ukraine: Survey Results", 2024, Link.

[113] IOM DTM, "Ukraine—Internal Displacement Report—General Population Survey, Round 18," October 2024, Link.

[114] OECD, "Strengthening the Human Capital of Forcibly Displaced Persons in and from Ukraine: Background Note for the Ukraine Recovery Conference 2024," OECD Policy Responses on the Impacts of the War in Ukraine, 2024, Link.

[115] Amnesty International, "Ukraine: 'They Live in the Dark': Older People's Isolation and Inadequate Access to Housing amid Russia's Invasion of Ukraine," December 1, 2023, Link.

[116] CCCM Cluster, Protection Cluster, and REACH, "Vulnerabilities in Collective Sites: Addressing Gaps in Service Provision and Identifying Solutions," November 2024, Link.

insecurity and housing cost overburden, and they tend to be subject to longer-term stays in collective sites. While cash subsidies might be an efficient short-term instrument, they are insufficient to address a shortage of safe and affordable housing.

Persons with Disabilities

Summary

Persons with disabilities are among the groups suffering the most from the adverse effects. Moreover, as noted in the RDNA3, there has been a rise in the number of people with disabilities—whether temporary or permanent—within the civilian and ex-combatant populations. According to the MoSP as of January 1, 2024, the number of persons with disabilities in Ukraine amounts to 2 839 207 people.[117] Approximately 217,591 persons with disabilities are in Group I, 954,006 persons with disabilities are in Group II, and 1,508,709 persons with disabilities are in Group III. There are 158,901 children with disabilities.[118] Since February 2022 the number of persons with disabilities increased by 117,516, including 12,651 persons with disabilities in Group I, 65,274 persons with disabilities in Group II, 36,700 persons with disabilities in Group III, and 2,891 children with disabilities.

Observed Impacts

The 2023 reform of the Medical and Social Expert Commission (MSEC) marked a significant shift in public policy regarding individuals with disabilities in Ukraine. Previously, the MSEC was responsible for certifying individuals' disability status. But after the exposure of major corruption cases within MSEC, a new law was adopted that replaces the former disability assessment procedure done by MSEC with the "assessment of daily functioning" done by expert teams working in hospitals.[119] An earlier law adopted by Verkhovna Rada[120] regulated the disability assessment procedures and was supported by Ukrainian civil society organizations (CSOs).[121] Nonetheless, Ukrainian CSOs highlight the need to pursue a comprehensive approach to the reform and draft a strategy for reforming the disability identification before moving further toward changing specific legislation.[122]

The exclusion of persons with disabilities from social and economic life remains a key issue, one that has only deepened over the last year. Households that include persons with disabilities usually experience a higher cost of living due to the need for disability-related services and care. For this reason, the war-related economic crisis has had a more profound impact on persons with disabilities. According to recent data,[123] persons with disabilities report higher subjective poverty and fewer employment

[118] Group I disability includes people who have completely lost the ability to work and require constant care; Group II disability includes people capable of self-care but unable to work under normal production conditions; Group III disability includes people who are able to work under lightened conditions.
[119] Government of Ukraine, "The Verkhovna Rada of Ukraine Adopted a Law on the Implementation of Assessing the Daily Functioning of Individuals" [in Ukrainian], press release, December 20, 2024, Link.
[120] "On Amendments to Certain Laws of Ukraine regarding the Improvement of Procedures for Conducting Medical and Social Expertise," draft law of Ukraine dated April 30, 2024, No. 11225, Link.
[121] Yurystovska Anastasia "Civil Society Organizations Urge Support for the Draft Law on Improving the Procedures for Medical and Social Expertise" [in Ukrainian], League of the Strong, August 20, 2024, Link.
[122] Yurystovska Anastasia, "We Need Comprehensive Changes for the Better Instead of Fragmented Actions: The Position of the 'League of the Strong' on the Reform of Disability Identification" [in Ukrainian], League of the Strong, December 20, 2024, Link.
[123] UNDP, USAID, SeeD, and EU, "A Resilient Picture: Experiences of Persons with Disabilities in Ukraine," 2024, Link.

opportunities than those without disabilities. Households that include persons with disabilities report lower income levels than other social households.[124] Approximately 70 percent of families that include persons with disabilities report income per person lower than UAH 6,318 (US$152.07). Of households that include persons with disabilities and live in collective sites, 45 percent report that they face financial strain in accessing health care.[125] As indicated in RDNA3, according to the Pension Fund of Ukraine, only 17 percent of persons with disabilities are officially employed; most depend on social assistance programs and are unemployed. Some 5 percent of the population relies on social assistance as their main source of income, and disability benefits are the most common source of such assistance.[126]

Persons with disabilities continue to face significant challenges and barriers, including a lack of appropriate communications and digital platforms as well as obstacles in the built environment (e.g., housing, bomb shelters, and public transport). According to the Ministry of Strategic Industries of Ukraine, less than 10 percent of bomb shelters in Ukraine are inclusive.[127] There is also a rural-urban divide in the availability of accessible shelters; persons with disabilities living in rural areas report having less access to bomb shelters and equipped facilities than those living in urban areas.[128]

Inaccessible social services and care also continue to pose significant challenges for persons with disabilities. The MoSP reported that 3,000 individuals were re-institutionalized following displacement due to inadequate social service capacity, including a lack of available premises for provision of social services. Additionally, the MoSP identified over 18,600 individuals with disabilities or older persons requiring care, including some who reside in 31 institutions located in frontline areas, as being in urgent need of evacuation and relocation. Addressing these challenges requires investments in appropriate accessible facilities and in enhanced capacity for assisted living and facility-based and home-based care, among other services.

Like the other groups considered in this chapter, persons with disabilities have a critical need for access to adequate housing. Beyond inaccessibility, there are other housing challenges faced by persons with disabilities. For this group, housing and the accessibility of social services and care are intricately connected. According to the MoSP, a significant share of evacuated persons with disabilities requires additional assistance and support, including geriatric care.[129] As noted in the RDNA3, Russia's invasion of Ukraine has accelerated deinstitutionalization reform. In line with recent attempts to facilitate this reform and implement assisted living services, there is a need to find housing that is in proximity to accessible and appropriate care. The difficulty of finding suitable housing remains significant for both national and local governments and is curtailing efforts to accelerate deinstitutionalization reform.

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[124] IOM DTM, "Ukraine—Income, Social Protection, and Coping Strategies in Ukraine," November 2024, Link.
[125] CCCM Cluster, Protection Cluster, and REACH, "Vulnerabilities in Collective Sites: Addressing Gaps in Service Provision and Identifying Solutions," November 24, 2024, Link.
[126] Ibid., 7.
[127] "In Ukraine, Less than 10% of Shelters Are Inclusive" [in Ukrainian], *Ukrinform*, February 2024, Link. The article quotes Timur Tkachenko, Deputy Minister of Strategic Industries of Ukraine, as follows: "The situation with shelters in Ukraine is not very encouraging. We have less than 10% of facilities that are inclusive. The total number of shelters is about 60,000, of which only 5,000 are inclusive."
[128] UNDP, USAID, SeeD, and EU, "A Resilient Picture: Experiences of Persons with Disabilities in Ukraine," 2024, Link.
[129] Ministry of Social Policy of Ukraine, "Evacuation of People with Disabilities and the Elderly from Frontline Areas: Meeting of the Ministry of Social Policy and Representatives of International Organizations" [in Ukrainian], November 28, 2024, Link.

Limited financial resources combined with rising rent prices and a lack of social housing make it difficult for persons with disabilities to transition from temporary to long-term accommodation. Like older persons, displaced persons with disabilities tend to remain in collective sites for prolonged periods without the prospect of moving into other types of housing. Approximately 36 percent of collective site[130] households have a household member with either a formal disability or a disability identified using the Washington Group Short Set questions.[131]

Recovery and Reconstruction Needs, including Build Back Better

***Encourage employers to hire persons with disabilities by offering employer subsidies and conducting awareness-raising campaigns*.** Reducing barriers to employment is central to ensuring the inclusion of persons with disabilities in socioeconomic life. Training and outreach programs should also be intentional about addressing disabilities.

***Invest in infrastructure and in training and capacity-building programs for local government to ensure that persons with disabilities receive the necessary support and care*.** In addition to supporting cash benefits programs, there is also a need to invest in new and rehabilitated facilities that apply accessibility standards and in the overall social services ecosystem. Such investment will help ensure that local governments are capable of covering existing needs and swiftly reacting to war-related challenges.

***Prioritize recovery investments for premises that could provide social services for persons with disability*.** Such recovery investment is critical to enable the safe evacuation of persons with disabilities, including those living in institutions in frontline areas, while ensuring continuous and long-term care in line with the government's deinstitutionalization agenda.

Invest in developing the social housing system in order to reduce and ultimately eliminate community-level barriers to deinstitutionalization. Access to social services and support for people with disabilities might be contingent upon access to adequate housing, just as it is for older persons.

Strengthen community-based psychosocial interventions tailored to persons with disabilities. For those separated from their usual social environment due to displacement, the aim should be to enhance people's overall well-being and capacity for social adaptation and integration.

Youth (Ages 14–35) [132]

Summary

Before February 2022, Ukraine was home to 3.89 million young people ages 15 to 24 (representing 9.5 percent of the population) and to 10.5 million people ages 14 to 35 (representing about one-quarter of

[130] CCCM Cluster, Protection Cluster, and REACH, "Vulnerabilities in Collective Sites: Addressing Gaps in Service Provision and Identifying Solutions," November 2024, Link.
[131] Washington Group on Disability Statistics, "WG Short Set on Functioning (WG-SS)," Link.
[132] This subsection focuses mainly on the youth demographic as defined by the United Nations, which includes individuals ages 15 to 24. However, it also incorporates information on those ages 14 to 35 in Ukraine and abroad—that is, "youth" as officially defined in Ukraine. This age group represents a critical period of transition from childhood to adulthood, characterized by decisions regarding education, entry into the workforce, and career choices.

the population).[133] Two-thirds (67 percent) of young people lived in cities. The share of males in this age group slightly exceeded the share of females at 51.5 percent.[134]

Observed Impacts

Youth centers—which are crucial in fostering youth activism, civic education, and other important activities—have suffered significant damage and destruction. As of November 2024, 45 youth centers across the country had been completely destroyed, while 65 remained in areas temporarily not under government control.

Since February 2022, 79 percent of young people have experienced adverse impacts.[135] By most measures, the most significant negative impacts have been reported among young people from the regions in the East of Ukraine. The most common impacts include a decrease or loss of income, reported by 36 percent in 2023 and 30 percent in 2024; the death of friends or family members, reported by 14 percent in 2023 and 28 percent in 2024 overall, with the figure reaching 49 percent in eastern part of Ukraine; and a deterioration in mental health, reported by 28 percent in both 2023 and 2024.[136]

The proportion of young people concerned about their mental health has increased. A December UNDP report found that 25 percent of young people have expressed concern about their mental health. This figure rises to 61 percent among young people who have moved abroad.[137] In the face of constant stress, anxiety, shelling, power outages, and other challenges, the mental health of young people is deteriorating. Meanwhile, the percentage of young people requiring psychological support has also increased, especially among young people from the West of Ukraine. Adolescents and their caregivers often lack the knowledge necessary to recognize mental health issues and access appropriate care. This prevents them from help and leaves mental health challenges unaddressed. The absence of proper support systems exacerbates the emotional and psychological struggles faced by young people, impacting their overall development and quality of life.

Learning losses continue to deepen at all levels of education. Shelling, air raids, lack of shelters, inadequate shelters, and distance learning are all consequences of Russia's invasion of Ukraine that are exacerbating educational losses.[138] A decline in students' academic performance is reported by both teachers (63 percent) and principals (66 percent).[139] More than half (58 percent) of teachers in cities and slightly less than half (46 percent) of teachers in villages observe some or significant learning losses in students.[140] In regions with high danger levels, most educational institutions have switched to distance

[133] Data on population are from the State Statistics Service of Ukraine (SSSU) and are as of January 1, 2022.
[134] SSSU provides population data, including age and regional distribution, that are estimations based on data from the last general census, conducted in 2001. Thus the real number of young people and their distribution may differ from SSSU estimates. After Russia's invasion of Ukraine, SSSU stopped assessing the size of the population and surveying households, so there is no information on the number of young people after March 1, 2022.
[135] UNDP, "Impact of War on Youth in Ukraine," 2024, Link.
[136] Ibid.
[137] Ibid.
[138] For a quantification of these losses, please see the education chapter.
[139] savED, "War and Education: 2 Years of Full-Scale Invasion," 2024, Link.
[140] Ibid.

learning, which is contributing to learning losses in all level of education, including secondary, professional and higher education.

Affordable housing for young people is crucial for meeting their basic needs. From 2023 to 2024, the proportion of youth who lost their housing doubled (from 5 percent in 2023 to 10 percent in 2024).[141] An estimated 32 per cent of young people who are living in rented housing spend more than 30 percent of their monthly income on housing and are thus in a potentially vulnerable housing situation.[142] Youth is not a homogeneous group, and vulnerable subcategories, such as IDPs, may lack access to good-quality housing.

Recovery and Reconstruction Needs, including Build Back Better

Invest in the restoration of youth infrastructure. Youth infrastructure needs to be thoroughly assessed and rebuilt to better align with the evolving needs and aspirations of young people.

Implement a national strategy for overcoming educational losses for secondary schools. Currently, programs to compensate for learning losses are being carried out on a case-by-case basis by civil society organizations. However, there is now a pressing need for a national policy to scale up these recovery measures and programs across Ukraine.

Develop a unified national strategy to bridge the gap between education and employment for youth. This should involve the creation of career guidance systems, skills development programs, and internship opportunities that offer practical experience. Expanding access to information about career options, skills training, and job opportunities will support young people in transitioning more effectively from education to the workforce, ultimately helping to reduce youth unemployment rates.

Improve and expand institutional support for youth organizations and community spaces. These spaces should provide mental health and psychosocial support as well as general youth development services.

Support initiatives for improved provision of mental health and psychosocial support. The focus should be on children and young people, both in Ukraine and abroad. Online platforms offering free mental health services with Ukrainian-speaking psychologists should be available and accessible.

Invest in evidence-based assessments to identify the needs of youth at the local level. The participation of youth in planning processes should also be increased.

Develop social housing programs for youth to ensure that young people have access to affordable and stable living conditions. These programs should focus on providing housing options that are both financially accessible and tailored to the needs of young people, especially those starting their careers or pursuing education.

[141] UNDP, "Impact of War on Youth in Ukraine," 2024, Link.
[142] Cedos, "Housing and ResidentialConditions in Ukraine: Survey Results", 2024, Link.

War Veterans and their Families

Summary

Since February 24, 2022, the number of war veterans has increased dramatically. As of July 2024, there were 1.3 million war veterans in Ukraine, 80 percent of whom were mobilized. War veterans and their families face several vulnerabilities, including displacement, disability, and loss of housing, jobs, or education. At the same time, many war veterans are economically active people of working age. Nonrepresentative surveys conducted among war veterans found that two-thirds were ages 40 or younger (35 percent were 31–40 and 31 percent were 19–30).[143]

Observed Impacts

Material assistance remains one of war veterans' most pressing needs. A study by the Ukrainian Veterans Foundation found that as of May 2024, 59.8 percent of war veterans needed financial assistance, and that 43.2 percent were not satisfied with the financial aid provided to them.[144]

Employment and retraining of war veterans is also identified as a high priority. As noted in the RDNA3, war veterans are a large group that includes many working-age people who need employment and retraining. According to the Ukrainian Veterans Foundation, 30 percent of war veterans cannot find a job.[145] A survey among active military personnel shows that 33 percent seek assistance in employment, 28 percent seek information on existing programs for war veterans, and 27 percent seek education/retraining services.[146] Efforts are underway to establish war veteran development centers at higher education institutions in Ukraine to provide opportunities for retraining and professional skills development.[147]

In early 2024, the Ministry of Education and Science (MoES) launched the Education for Veterans platform, which was developed with the support of the Skills4Recovery program.[148] This platform offers formal and informal training programs for war veterans. Two-thirds (67.79 percent) of war veterans indicated that they do not have information about state retraining and education programs.[149] Over half (53.1 percent) indicated that expanding areas of training and retraining should be one of the factors in meeting the main conditions for employment.

For war veterans and combatants who have been injured or wounded, the rehabilitation process remains challenging. According to a nonrepresentative survey, 58 percent of combatants reported that in the acute period (one to three weeks) after an injury/wound, the medical facility did not provide them

[143] Ukrainian Veterans Foundation, "Portrait of a Veteran: Russian-Ukrainian War 2014–2022," July–August 2022, Link.
[144] Ukrainian Veterans Foundation, "Employment of Veterans: What the Analysis of Ukrainian Legislation and the Study of the Best Practices of International Experience Showed" [in Ukrainian], July 2, 2024, Link.
[145] Ibid.
[146] Ukrainian Veterans Foundation, "Актуальні потреби та бачення можливостей для кар'єрного та професійного зростання ветеранів" [Current Needs and Visions of Opportunities for Career and Professional Growth of Veterans], January 15–25, 2024, Link.
[147] Ministry of Veterans Affairs, "Центри ветеранського розвитку" [Veterans Development Centers], Link. As of January 2025, 25 such centers had been established.
[148] The Education for Veterans platform is available at Link.
[149] Ukrainian Veterans Foundation, "Актуальні потреби та бачення можливостей для кар'єрного та професійного зростання ветеранів" [Current Needs and Visions of Opportunities for Career and Professional Growth of Veterans], 2024, Link.

with rehabilitation services.[150] Some 52 percent rated as unsatisfactory the military unit's efforts to resolve various issues during rehabilitation. Combatants do not receive adequate rehabilitation assistance in state hospitals and are forced to turn to private providers. The same is true for most war veterans; 64 percent report that they did not receive necessary services in a public hospital and thus were forced to seek private rehabilitation services.[151]

Families of missing or fallen combatants are not kept well informed. Families of missing service members are frequently not fully informed about the search process and the roles of the different agencies and organizations involved. They also face challenges in obtaining information about benefits, financial assistance, and legal aid available to them.[152]

There is a lack of adequate housing for war veterans and their families. In a survey of war veterans, 39.2 percent of respondents indicated that they would need housing assistance in the future.[153] Current programs for war veterans do not provide assistance with adequate and affordable housing.

Recovery and Reconstruction Needs, including Build Back Better

Develop and promote both state and nonstate programs for the retraining and skill development of war veterans to ensure their smooth transition into civilian life. These programs should equip war veterans with the knowledge and practical skills necessary to adapt to the evolving labor market. By offering a range of vocational training, certification programs, and career counseling, these initiatives can help war veterans pursue new career opportunities, achieve long-term employment stability, and ensure the smooth transition to civilian life. Programs for war veterans should take the needs of female war veterans into account.

Improve the system for providing information to families of missing and fallen combatants. Families should be provided with detailed instructions related to all the steps and required actions that arise in their situation.

Provide comprehensive support for war veterans who have been discharged from military service. This is particularly relevant for those who have lost their source of income and require rehabilitation. Adequate rehabilitation must include comprehensive psychological support and should take into account the needs of female war veterans.

Implement social and affordable housing programs for war veterans. This will help ensure they have stable and secure living conditions after their service.

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[150] Pryncyp, "Реабілітація українських військових та ветеранів: досвід долання несистемності" [Rehabilitation of Ukrainian Military and Veterans: Experience of Overcoming Inconsistency], 2024, Link.
[151] Ibid.
[152] Cedos, "Дослідження досвіду та потреб родин зниклих безвісти військових" [Study of the Experience and Needs of the Families of Missing Soldiers], August 20, 2024, Link; Cedos, "Дослідження досвіду та потреб близьких загиблих військових" [Study of the Experience and Needs of the Relatives of Missing Soldiers], November 25, 2024, Link.
[153] Ukrainian Veterans Foundation, "Актуальні потреби та бачення можливостей для кар'єрного та професійного зростання ветеранів" [Current Needs and Visions of Opportunities for Career and Professional Growth of Veterans], January 15–25, 2024, Link.

Recruit and train social workers, mentors, and others to assist war veterans and their families. These people will serve as resources for war veterans, will help them access benefits, and will support and encourage them as they pursue reentry into civilian life.

Gender Specific Impacts

Summary

Russia's invasion of Ukraine has had significant adverse impacts on women and girls, including older persons, women and girls with disabilities, female internally displaced persons (IDPs), gender and sexual minorities. These groups face heightened poverty and food insecurity as well as limited access to essential services. The damage to women's employment is evident in falling employment rates among women and a widening gender pay gap. Women-only households face critical needs; 35 percent of such households are living below subsistence levels. Gender-based violence (GBV), including conflict-related sexual violence (CRSV), and human trafficking have surged, and services for survivors are unable to meet the demand. Despite their significant contributions to humanitarian response and recovery efforts in Ukraine, women remain underrepresented in decision-making positions, holding only 21 percent of parliamentary seats and 18 percent of ministerial roles,[154] and heading just one of 25 regional administrations.[155] Urgent action is needed to address their unmet needs, reduce vulnerabilities, and rebuild their economic and social stability.

Observed Impacts

Russia's invasion of Ukraine has exacerbated gender inequalities in employment, income, and entrepreneurship. Between 2021 and 2023, the employment rate among women dropped from 52.7 percent to 49.8 percent, while informal employment rose from 16.2 to 18.8 percent in 2023.[156] Of the total registered unemployed in 2023, women constituted 74.9 percent.[157] These data suggest a significant displacement of women from formal employment into precarious and less- regulated work due to Russia's invasion of Ukraine. As informal employment among women has increased, more women are unable to protect their rights in their relationships with employers which is further shrinking the space for decent work. This includes challenges such as securing fair employment conditions, occupational safety and health, and social security rights (maternity leave, paid leave, sick leave, or additional unpaid time off, and in a longer run – pension security).

The gender pay gap has also widened; estimates show that women earned 41.4 percent less than men on average in 2023, compared to 18.6 percent less in 2021.[158] This situation, combined with informal employment and the necessity of supporting their families in the absence of men, increases the vulnerability of some women to exploitation, including sex trafficking. Women have encountered significant barriers entering male-dominated industries, as discriminatory practices persisted.[159]

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[154] Government Portal, "Cabinet of Ministers of Ukraine," 2024, Link.
[155] President of Ukraine, "Heads of Oblast State Administrations," 2024, Link.
[156] UN Women, "Challenges of Empowering Women in the Labour Market and Entrepreneurship in the Context of Full-Scale War and Gender-Responsible Recovery of Ukraine," 2024, Link.
[157] State Employment Service data as of December 2024.
[158] UN Women, "Challenges of Empowering Women in the Labour Market and Entrepreneurship in the Context of Full-Scale War and Gender-Responsible Recovery of Ukraine," 2024, Link.
[159] Ibid.

Occupational segregation limited women's opportunities and prevented various sectors—including construction, transport, information and communication technology (ICT), and agriculture—from utilizing women's human capital. At the same time, the conscription of men have placed additional domestic responsibilities on women, limiting their opportunities for education and self-development. Furthermore, informal work complicates the process of securing an official, high-paying job in the future, as candidates often struggle to verify their work experience or provide references.

The expectation that women will perform unpaid care work, especially childcare, continues; this particularly impacts displaced female-headed households and those with multiple dependents.[160] As estimated by UN Women experts, women in Ukraine spend over 16 hours per week more than men on unpaid domestic work,[161] and the potential cost implications of women's increased unpaid childcare work since February 2022 is about US$72.5 billion.[162] The care burden on women also prevent women from engaging in the labor market and thus creates labor deficits.

The intersection between gender and factors such as age, disability, and displacement status heightens vulnerability. Close to one-third (29 percent) of women reported persons with disabilities in their households, compared to around a quarter (26 percent) of men.[163] Women-only households (18–59 years) face severe livelihood challenges; 35 percent of such households live below the subsistence level, compared to 19 percent of men-only households.[164] Women-only households also reported the greatest needs related to education and to water, sanitation, and hygiene. Women-only households with disabilities are especially vulnerable and report lower incomes and more significant health and livelihood needs than comparable male-headed households.[165] Older women (60+) are more likely to live alone, and 49 percent of displaced older women report feeling depressed nearly every day. Women with disabilities were 13 percent less likely to receive benefits than men and had lower employment rates (21 percent versus 34 percent). Nearly 25 percent of women reported food insecurity.

There are significant needs among vulnerable populations, which will require substantial financial allocations to address. Women comprise 59.8 percent of the total IDPs, and more women than men depend on social assistance. Notably, in 2024, the state budget allocated the equivalent of US$1.38 billion to IPDs for living assistance. Over US$3.8 billion has been paid out since February 2022.[166]

The risks and prevalence of GBV and human trafficking in Ukraine remain a critical issue after February 2022, due to factors such as sexual violence committed by Russia's troops as well as intimate partner violence and domestic violence against women and girls that is driven by war-related stressors (e.g., shared living conditions, financial strain, and negative coping behaviors like substance abuse). Women in relationships with or associated with war veterans and armed forces personnel face additional risk factors linked to these stressors. The National Police recorded 168,256 complaints of domestic violence during

[160] CARE, "Ukraine Rapid Gender Analysis," August 2024, Link.
[161] Calculations are based on data from UNDP, "Ukraine: Human Impact Assessment," June 2023, Link.
[162] Calculations are based on 2021 data from the State Statistics Service of Ukraine and on UNDP, "Ukraine: Human Impact Assessment," June 2023, Link. Please refer to the gender subchapter in the RDNA3 report for an explanation of the calculations.
[163] IOM, Materials of Meaning-Making Workshop on Gender and Disability, September 27, 2024.
[164] Ibid.
[165] Ibid.
[166] Ministry of Social Policy data.

the first 10 months of 2024.[167] Most GBV survivors, especially in smaller towns, do not seek help. Survivors report various reasons for this: some (27 percent) lack faith in the possibility of change; others (24 percent) view GBV as a private matter; and still others fear repercussions or are financial dependent on perpetrators. Additional reasons why women do not seek help include stereotypes of women, lack of information about available support, and systemic barriers like indifference, bureaucracy, and victim-blaming.[168]

Access to GBV services remains a critical challenge.[169] As of December 2024, 1,130 specialized GBV services were operational, but staffing levels were below planned capacities, ranging from 53.96 percent for shelters to 90.47 percent for hotlines.[170] In 2024, 165 communities, primarily in frontline areas and areas temporarily not under government control, were unable to maintain specialized GBV services.[171] Survivors face numerous barriers, including financial constraints, poor infrastructure, and fears of judgment and retaliation.

Women IDPs, returnees, older women, women with disabilities, and Roma women and girls face heightened GBV risks due to intersecting vulnerabilities and systemic barriers such as poverty, collective sites that are difficult to access or overcrowded, discrimination, social stigma, dependency, limited financial and caregiving support, and harmful social norms. These groups are further hindered from accessing services and support systems because they tend to be left out of decision-making and because systems and facilities make few inclusive adaptations.[172]

Human trafficking risks in Ukraine have surged due to financial instability and limited livelihood opportunities. The National Social Services identified 177 cases of human trafficking (66 women, 101 men, 5 girls, 5 boys) between January and December 2024.[173] IDPs, returnees, and rural residents near frontline are particularly at risk. Online platforms have become a common tool for traffickers seeking to recruit individuals for sexual services, and labor exploitation remains a pressing concern.[174]

Between February 24, 2022, and November 30, 2024, the UN Human Rights Monitoring Mission in Ukraine documented 370 cases of CRSV (involving 252 men, 106 women, 10 girls, and 2 boys),[175] and as of November 1, 2024, the Office of the Prosecutor General had reported 326 cases.[176] There is proxy data confirming that prevalence of CRSV is significantly higher than reported, such as the survey revealing that 3 percent of the Ukrainian population knows somebody who experienced CRSV.[177] New laws are establishing a reparations framework for CRSV survivors, and a joint pilot project with the Global Survivors

[167] National Police of Ukraine website, Link.
[168] NGO Girls and World Vision, "Gender-Based Violence in Ukraine amid War: An Assessment Report," 2024, Link.
[169] Ministry of Social Policy data, Link.
[170] National Agency on Social Services data.
[171] Ministry of Social Policy data.
[172] UNFPA, "Voices from Ukraine 2024: Assessment Findings and Recommendations," 2024.
[173] National Social Services of Ukraine data on trafficking in persons.
[174] CARE, "Ukraine Rapid Gender Analysis," August 2024, Link; IOM, "Vulnerability to Trafficking in Persons and Labour Exploitation in Ukraine," June 2024, Link.
[175] OHCHR, "Report on the Human Rights Situation in Ukraine (1 September–30 November 2024)," Link.
[176] Prosecutor General's Office, "Conflict-Related Sexual Violence: How to Recognize and Counteract," 2024, Link.
[177] UN Women and InfoSapiens, "Study on the Impact of Security Challenges on Girls and Boys, Women and Men in 2022–2023," 2023, Link.

Fund has provided interim compensation equal to US$3,150 to each of 500 survivors.[178] There is a clear need for more thorough costing studies to align interim reparations with Ukraine's recovery priorities.

Recovery and Reconstruction Needs, including Build Back Better

To ensure gender-responsive recovery in Ukraine, the following priorities should be emphasized:

- Implement interventions to address the decline in women's employment and the widening gender pay gap. Support women's entry into male-dominated industries. Increase access to financing for women entrepreneurs and ensure better working conditions for women workers.
- Reduce women's unpaid care work by rebuilding childcare facilities, schools, and care services for persons with disabilities and older persons. Engage men in unpaid care work and support employer-based childcare initiatives to ease the disproportionate burden on women.
- Invest in GBV prevention and response services to address the surge in GBV cases. Specific steps to be taken include diversifying safe entry points, increasing access to specialized services (particularly GBV case management), and strengthening specialized services. Efforts must prioritize reaching displaced women, rural communities, trafficking survivors, sexual and gender minorities, and other vulnerable groups.
- Address women's underrepresentation in decision-making at all levels through temporary special measures such as quotas, leadership training, and gender-responsive planning and budgeting.
- Undertake a comprehensive costing study of the interim reparations needed for survivors of CRSV, with the aim of establishing a funded interim reparations framework.
- Strengthen the collection, analysis, and dissemination of sex- and age-disaggregated data to track gender-specific impacts and ensure evidence-based decision-making. Data should focus on the intersection of gender with age, disability, war veteran status, and displacement status to tailor recovery efforts effectively.

[178] "Reparations for Survivors of Wartime Violence: Presentation of Project Results," *Ukrinform*, video, Link.

SOCIAL SECTORS

Housing

Context

Housing is among the sectors most impacted by Russia's invasion of Ukraine: 13 percent of the total housing stock has been damaged or destroyed, affecting more than 2.5 million households.[179] The number of damaged units has increased by 26 percent since RDNA3. Before February 2022, the housing stock comprised around 20 million units distributed across multifamily buildings (MFBs), dormitories, and various types of single-family houses (SFHs). MFBs are predominant in urban areas and cater to nearly 67 percent of the urban population. In larger cities, this share increases to 79 percent. The asset typology used in this housing sector assessment remains unchanged from previous RDNAs. MFBs are categorized into two groups: Soviet-era apartment buildings (pre-1991), which are estimated to constitute 88 percent of the apartment building stock; and the more recent (post-1991) multifamily apartments, which are estimated to account for 12 percent of the apartment building stock. Almost 95 percent of the population live in units they own,[180] and as of 2013, only about 3.4 percent of households were officially considered renters, although an additional 10–15 percent likely rent informally.[181] More recent estimates suggest that the share of renters has gone up.[182]

Due to the substantial volume and scale of damage to the sector and the resulting needs, the housing sector has been consistently prioritized since the invasion. The GoU, along with local authorities, international partners, and donors, has dedicated financing and assistance for a range of activities, including emergency response, repairs, reforms, and building back better (BBB). The GoU's Registry of Damaged and Destroyed Property (RDDP) mandates the verification and registration of damaged assets by hromadas;[183] it also acts as a centralized tool for monitoring the extent, nature, and location of damaged assets and progress on their repair and reconstruction. As of December 2024, the RDDP covered an estimated 90+ percent of damaged MFBs, 90+ percent of damaged/destroyed dormitories, and nearly 60 percent SFHs across Ukraine, with some variation by region.[184] The GoU has also launched various compensation programs—including the eRecovery repair program[185]—that cater to residential property owners with damaged or destroyed units and to internally displaced persons (IDPs). These are financed with the help of donors and international financial institutions (IFIs). Multilateral organizations, donors,

[179] The housing sector concentrated 40 percent of the total cost of damage in RDNA1, 38 percent in RDNA2, and 36 percent in RDNA3.

[180] Ownership rights are in the process of being systematically included in the State Registry of Rights for Real Estate (eRegistry), which was established in 2015, only after privatization had been largely completed.

[181] United Nations Economic Commission for Europe, "Country Profiles on Housing and Land Management: Ukraine," 2013, Link.

[182] 72 percent of nondisplaced people own; 17 percent are hosted free of charge; and 8 percent rent. IOM, "Ukraine Housing Brief: Living Conditions, Rental Costs and Mobility Factors, July 2024, Link

[183] Ukraine has three levels of constitutionally guaranteed subnational government: (i) oblasts, or regions, (ii) raions, or districts, and (iii) hromadas, or local self-government units that range from cities to villages and rural hamlets.

[184] The RDDP coverage has been increasing and is up from 40 percent in April 2023. The interagency Shelter/Non-Food Item (NFI) Cluster, led by UNHCR, developed the Shelter Information Damage Assessment and Response Database (SIDAR) in which humanitarian actors report assessed damage, needs, and repairs completed, to provide comprehensive data on damage and prevent duplication amongst actors. Collaboration between the SNFI cluster and RDDP is on-going to connect respective databases.

[185] Financed by the Housing Repair for Peoples Empowerment Project with funds from the World Bank, Link.

and CSOs have been providing critical support for emergency repairs and response targeted to vulnerable groups while also investing in much-needed energy-efficient repair and restoration of MFBs.

In coordination with the EU, World Bank Group, the UN, and other partners, including CSOs, the GoU has accelerated its reform agenda within the sector. The main reform objective is to modernize housing policy through, among others, by formulating and adopting the Law on "The basic principles of Housing Policy, formulating the draft law on social housing, developing a forward-looking national housing strategy, updating property rights regulations and urban development to cater to present and future needs, and streamlining institutional and operational structures to facilitate the recovery of the sector in a manner that is climate-smart, inclusive, and resilient and that advances the Ukraine Plan.

Recovery has been consistent and marked by noteworthy advancements, yet it is outpaced by the needs, which have increased by US$3.4 billion, or 4 percent, since RDNA3. The current pace of recovery is impeded by the persisting macro-fiscal and sectoral challenges and large uncertainties posed by Russia's invasion of Ukraine. The necessity to further strengthen capacity implementation and technical capacities at the national level and (to a larger extent) at the local level remains essential for accelerating recovery. Given the magnitude of damage and the diverse range of housing sector needs, it is crucial that donors, IFIs, CSOs, nongovernmental organizations (NGOs), and the private sector continue to supplement efforts at the national and local levels.[186]

Damage and Loss Assessment

As of December 31, 2024, the total cost of damage to the housing sector was estimated at US$57.6 billion (Table 7). The number of damaged or destroyed units showed an increase of 26 percent since RDNA3, while the increase in the cost of damage since RDNA3 is disproportionally lower, just 3 percent. There are three main reasons for this. First, data on average unit sizes and average number of units in MFBs have been changed for RDNA4 and are derived from multiple verified sources such as the RDDP. Second, the calculation of repair costs for units with minor damage has been adapted to better reflect actual average costs for minor repairs (as seen in relevant programs and projects). Finally, in some regions, better data verification and more habitability and technical inspections have led to a redistribution of the total impacted units by damage level that skews toward the lighter damage level. [187] MFBs continue to represent the largest share of damaged units and damage costs, at 85 percent and 79 percent respectively. The total number of units impacted in MFBs increased by 451,988 units since RDNA3. The number of damaged or destroyed SFHs has increased from 220,315 to 319,956; this category accounts for around 12 percent of the total affected assets in the sector and 20 percent of total cost of damage. The number of damaged dormitory units stands at 67,506 as of the end of 2024. About three-quarters (76 percent) of the total damage is concentrated in four oblasts: Donetska (37 percent), Kharkivska (22 percent), Luhanska (9 percent), and Kyivska (8 percent); an additional 19 percent is estimated in Khersonska (6 percent), Kyiv City (4 percent) Mykolaivska (3 percent), Chernihivska (3 percent), Dnipropetrovska (3 percent). Over half of the impacted units are categorized as having minor damage,

[186] Emergency or minor rehabilitation is hampered by shortages of labour, travel restrictions and other issues at local level whereas reconstruction of MFBs requires extensive policy, standards, legislation and planning work, as well as financing and construction capacity.

[187] A higher proportion of units categorized as having minor damage.

which represents a notable 56 percent increase in the units with minor damage compared to RDNA3.[188] One-quarter (26 percent) of all damaged units belong to the medium damage category, while 23 percent have been considerably damaged or destroyed (above 40 percent).[189]

The housing sector has incurred a cumulative US$21.1 billion in losses (Table 7). Losses reflect estimated cost of demolition, debris removal, rental and bank loss, and costs associated with the provision of emergency housing support and temporary housing. Rental losses are estimated at US$13.7 billion,[190] while bank losses related to mortgages linked to destroyed assets are estimated at US$1.4 billion.[191] The total estimated cost of debris demolition and removal is a notable US$5.7 billion. Critical housing support—including operation and maintenance of collective centers and provision of emergency shelter kits and construction material—amounts to an estimated US$148 million. In addition, US$168 million has been provided as compensation to homeowners and utilities for housing and delivering basic services to IDPs.

Increasing damage in this sector is exacerbating the existing shortage of adequate, affordable, and safe housing in Ukraine, which poses an especially severe challenge for those who have been displaced and other vulnerable groups. More damage was reported by households in urban areas than in rural areas.[192] The invasion has caused large-scale displacement. Although the number of IDPs has been gradually declining over the 34 months since February 2022; as of December 2024, there were 4.6 million registered IDPs (MoSP) in Ukraine and over 6 million seeking refuge abroad.[193] In addition, there is also a large group of people who have been not classified as IDPs but are displaced from their original houses. Affected households are likely to have sold or lost durable goods due to displacement, destruction, or looting. The majority of IDPs reside in Dnipropetrovska (14 percent) and Kharkivska (12 percent) oblasts, while most originate from Donetska oblast (28 percent).[194] Around 4.3 million people have returned to their habitual residences, 26 percent of them from abroad, with high return rates recorded in Kyivska, Zaporizka, and Donetska.[195] The shortage of housing is aggravated in cities and regions with large numbers of IDPs and returnees, which face both demand-side pressure and supply-side constraints. Over half (59 percent) of

[188] The substantial increase in units with minor damage can likely be explained by the GoU's gradual adoption of more rigorous data collection methods together with the implementation of housing repair programs that
prioritize the inspection and recovery of partially damaged units first, starting with those that have minor damage.
[189] Damaged assets were categorized into three damage levels in agreement with the Ministry for Development of Communities and Territories for RDNA1: damage below 10 percent (considered minor damage), damage between 10 percent and 40 percent (considered medium or moderate damage), and damage above 40 percent (considered destroyed). All units that had damage of 40 percent or less are considered partially damaged and repairable in the short to medium term.
[190] Due to the prevalence of informality in the rental market, lack of verified data, and lack of access to reliable rental market data, estimations may not provide a clear indication of associated nuances and costs. Estimation of rental losses accounts for the following variables: (i) average rent per month reported by the GoU that has been adjusted to reflect other sources, (ii) rental market share assumed at 13 percent, and (ii) estimated number of IDP and registered households for the 34 months since February 2022 until December 2024, and the following 18 months.
[191] This category provides a simple estimate of loss incurred on the principal amount for destroyed housing units that were mortgaged.
[192] UNDP et al., "Human Impact Assessment: Ukraine," June 2023, Link.
[193] UNHCR Operational Data Portal, Ukraine Refugee Situation, Link (16 December 2024), UN High Commissioner for Refugees (as of December 16, 2024) and the International Organization for Migration (IOM).
[194] IOM, "Ukraine—Internal Displacement Report—General Population Survey, Round 19," January 2025, Link.
[195] IOM, "Ukraine—Returns Report—General Population Survey—Round 18," October 2024, Link; IOM, "Ukraine—Conditions of Return Assessment Factsheet—Round 9," December 2024, Link.

IDPs have been displaced for over two years, and 36 percent of those who plan to integrate into their current location continue to cite a need for secure, affordable housing.[196] Among IDPs, 8 percent reported living in homes that are damaged but still livable;[197] insulation-based repairs are a commonly cited need, while shortages of repair materials remain a concern, particularly in rural areas.[198]

IDPs face greater housing challenges than returnees due to high rental and utility costs, and vulnerable groups (such as those with disabilities or incomes below the subsistence minimum) are disproportionately affected. Displaced households belonging to lower-and middle-income groups, along with those who have been twice displaced, are particularly at risk; their limited financial resources and limited access to documentation can prevent them from repairing their own homes, seeking adequate temporary housing, or accessing monetary support programs. Obstacles to accessing housing were found to correlate with different displacement solutions: IDPs facing strong barriers to accessing adequate housing were less likely to plan to integrate in their current location than those facing no or lower barriers (28 percent versus 34 percent). These barriers to adequate housing significantly influence mobility decisions, as those with greater housing challenges are less likely to plan for long-term integration.[199] Additionally, access to their property or alternative housing is cited as the third most important factor in the return decisions of Ukrainians who have sought refuge abroad, with 21 percent of refugees citing housing as the main factor in their return decisions. 45 percent of Ukrainian refugees from areas under temporary occupation linked their return to access to their property or alternative housing.[200] For IDPs, it was the second most important factor—second only to the cessation of the war and the return of territories, with 31 percent saying it was their most important consideration for return.[201]

Recovery and Reconstruction Needs, including Build Back Better

The needs for the housing sector are estimated at US$83.7 billion (2025–2035) (Table 8). Of the long-term total, US$75.5 billion is for repair and reconstruction of housing assets under the BBB approach. MFBs, which account for 85 percent of total damaged units, have exceeded their design lifespan, are energy inefficient, and suffer from deferred maintenance and repairs. Thus, the restoration of MFBs needs to go beyond just repairs and incorporate climate proofing, disaster-proofing, and measures for compliance with EU standards and laws, specifically priorities like energy efficiency and inclusion. The restoration of housing assets also demands the completion of a suite of linked activities that are key determinants of the quality and pace of recovery, such as debris removal and demolition, inspections, technical designs and studies, and streamlining of implementation processes and associated capacity. All of these are accounted for in the total needs.

Despite significant funding, it is not possible to precisely quantify the current recovery, although indicative estimates suggest that at a minimum, US$5 billion worth of needs have been met. In 2024, of

[196] IOM, "Progress towards Durable Solutions in Ukraine: Thematic Brief," January 2025, Link; IOM, "Ukraine—Internal Displacement Report—General Population Survey, Round 18," October 2024, Link.
[197] IOM, " Winterization in Ukraine: Housing, Utilities, Mobility and Needs," December 2024, Link.
[198] Ibid.
[199] As of July 2024, the real subsistence minimum as determined by the Ministry of Social Policy was UAH 7,064.
[200] UNHCR, Lives on Hold: Intentions and Perspectives of Refugees, Refugee Returnees, and Internally Displaced People from Ukraine, November 2024, Link.
[201] UNHCR, Lives on Hold: Intentions and Perspectives of Refugees, Refugee Returnees, and Internally Displaced People from Ukraine, November 2024, Link.

the US$1.6 billion made available, US$1.3 billion was disbursed through state or municipal budgets or as loans and grants provided by donors and IFIs, most of which was dedicated to the repair and reconstruction of damaged assets. According to the MDCT and regional military administrations data, 6,736 MFBs and 46,887 SFHs had been restored by the end of 2024, at an estimated cost of US$4.9 billion. It should be noted that these numbers are likely to be an underestimate due to various reasons. First, many repairs completed by homeowners and local governments through their own resources may not have been recorded. Second, not all housing support programs active in Ukraine are updating the GoU system with information on repairs undertaken. Third, the tracking of recovered assets is proving to be challenging, as no one methodology or guidance can be uniformly employed across regions and hromadas or programs. For example, in the case of MFBs, the unit of reporting can be either an entire building or an apartment unit. Fourth, there is a considerable lag between the disbursement of funds and completion of works: for example, for households that have been provided compensation for the repair of their partially damaged units, completion of repairs is only expected 12–18 months after receipt of compensation.

Notwithstanding these challenges, there appears to be significant progress in the repair of units with minor damage. Extrapolation based on the reported recovered assets suggests that almost 300,000 housing units with minor damage have been repaired, accounting for about 20 percent of the total units with minor damage. This is likely a plausible estimate considering about 125,000 units with minor damage have been repaired under the activities of the Shelter Cluster, another 75,000 units through the GoU's minor damage compensation program[202] and several units through the 1000 MFBs repaired through the VidnoviDim Program.[203] The focus on minor damage is in line with the phased approach for housing recovery, which emphasizes the need for rapid minor and medium repairs in the short term as the fastest way to increase the supply of adequate housing and provide safe shelter for all groups, including IDPs. It is worth noting that local communities, such as homeowners' associations, play an important role in the recovery and reconstruction process. The establishment of homeowners associations is accelerating, supported by the Energy Efficiency Fund of Ukraine, and aligns with reforms and EU integration efforts.

Limitations and Recommendations for Future Assessments

Access to reliable data continues to be a key challenge for accurately assessing the level of damage in the housing sector. Access to reliable and detailed information has been severely hampered, making it increasingly challenging to accurately assess the impacts and associated costs for rebuilding. This is particularly true in territories that are temporarily not under government control. Although the RDDP has made great strides in collecting data on damaged assets, there is considerable room for improvement when it comes to consolidating data related to verifications and inspections. Admittedly, these are also contingent on the capacities of local governments, which are responsible for all physical inspections and reporting to the RDDP and are significantly constrained. To ease the pressure on municipalities, the capacity of local governments could be enhanced through supplemental support provided periodically by the RDDP team at the central level.

[202] Financed by the Housing Repair for Peoples Empowerment Project with funds from the World Bank, Link.

[203] By the end of 2024, VidnoviDim Programme supported mainly by the EU and Ukraine engaged over 97,000 households (over 1,000 applications of which 800 projects have been fully or almost fully completed). Projects completed so far included 223 km^3 of repaired facades, 192 km^2 of window area, and 171 m^2 of roof area.

Changes in data collection methods and tools prevent meaningful comparisons of results over time. It is important to acknowledge that the GoU has made efforts to improve data collection tools and mechanisms. However, because data collection processes are now different from those used in previous assessments, direct comparisons across assessments are challenging. For instance, although RDNA4 provides a cumulative assessment, changes in the average unit size used for calculating damage showed that costs of damage in some oblasts had declined, even though the number of damaged units had increased.

Moving forward, it would be worthwhile to design and implement a methodology for systematically and uniformly tracking recovered assets that can be used by all active programs, donors, IFIs, the UN and NGOs. Such a system would allow for improved determination of prevailing damage and targeted identification of specific housing sector needs across oblasts. It is important that such a system ensures alignment between different donors and various programs in the reform process. In addition, given the ongoing invasion, tracking of recovered assets and needs met could also potentially show if a repaired asset had been subject to further damage. Finally, the tracking system could act as a platform for improving donor coordination and strengthening monitoring, supervision, and tracking of beneficiary needs and gaps.

Table 7. Housing: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	117.9	29.6	173.9
Chernihivska	1,575.8	593.3	2,327.2
Chernivetska	0.1	7.6	9.0
Dnipropetrovska	1,825.7	2,820.6	2,545.6
Donetska	21,071.3	3,348.8	31,248.0
Ivano-Frankivska	0.3	1,531.7	36.6
Kharkivska	12,567.4	4,421.0	18,033.3
Khersonska	3,297.7	1,500.8	4,780.5
Khmelnytska	124.7	19.8	184.7
Kirovohradska	20.1	16.5	31.0
Kyiv (City)	2,167.1	148.3	2,908.1
Kyivska	4,459.1	1,626.3	6,598.8
Luhanska	5,135.6	1,226.8	7,122.7
Lvivska	119.9	20.8	183.5
Mykolaivska	1,591.6	968.9	2,323.4
Odeska	568.2	300.0	841.6
Poltavska	48.4	20.3	73.2
Rivnenska	12.0	8.0	28.6
Sumska	1,129.2	559.7	1,633.6
Ternopilska	31.7	13.5	95.5
Vinnytska	47.0	23.3	73.6
Volynska	0.8	559.0	49.2
Zakarpatska	2.5	1,184.7	25.1
Zaporizka	1,450.8	133.2	2,052.3
Zhytomyrska	239.6	23.2	350.4
Total	**57,604.5**	**21,105.7**	**83,729.3**

Source: Assessment team. *Note*: Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026; needs cover the period of 10 years from 2025 to 2035.

Table 8. Housing: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Repair and reconstruction	75,464.0
	Technical inspections, designs[a], documentation, and studies	2,127.1
Service delivery restoration needs	Organizational arrangements	37.5
	Regulatory and technical processes, plans, and strategies	12.5
	Support for temporary housing and emergency support	404.6
	Debris removal	5,682.7
Total needs		**83,729.3**
Total needs met		**5,012.5**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024. a. These refer to project designs and documentation and include, for example, technical and engineering studies and specifications for asset specific repairs, preparation of Bill of Quantities, and so on.

Education and Science

Context

Russia's invasion of Ukraine continues to pose challenges to the education sector's performance, primarily affecting in-person education and learning outcomes. Before February 2022, Ukraine's education sector fared comparatively well, with high enrollments at all levels and student performance above expectations for the country's level of development. Since 2014, the GoU has followed a comprehensive reform agenda to modernize the education system, including the New Ukrainian School (NUS) reform and a decentralization plan, aimed at tackling disparities in learning outcomes and improving the effectiveness of the education and science systems. However, since February 2022, education service delivery has been extremely challenging, and learning—at all levels, from preschool to higher education—has been affected. A large number of schools have been destroyed or damaged. As of December 2024, around 741,000 (20 percent of school-age children) children were studying in a hybrid format, combining in-person and remote learning because their education institutions lack bomb shelters, and more than 443,000 (12 percent of school-age children) children were entirely remote, due to the invasion and safety concerns. Moreover, 355,000 Ukrainian students had left the country, seeking refuge in other countries while continuing their education through Ukrainian programs, and 228,000 are internally displaced.[204]

The impacts go beyond displacement and damage, creating long-term learning losses, psychological trauma, and teacher shortages. By November 2022, learning outcomes (as measured by the Program for International Student Assessment, PISA) were already showing a decline (a drop in the average score in 2022 compared to 2018: mathematical literacy – from 453 to 441; science literacy – from 469 to 450, reading literacy – from 466 to 428). This decline has continued due to several factors related to Russia's invasion of Ukraine, including disruptions of education services and to stress and deteriorating mental health among students. Data from the 2023/2024 academic year reveals a high demand for psychological services, with a total of 5.6 million appeals received. These figures underscore the critical importance of robust psychological support within the educational system. Providing comprehensive mental health services is essential to address the emotional well-being of students, parents, and educators, fostering a supportive and nurturing learning environment for all. In addition, a post-2022 analysis of Ukraine's education sector has revealed a critical shortage of teachers. Migration, internal displacement, and other negative effects of the war have led to a reduction in the labor force by approximately 12 percent, corresponding to 40,000 educators. This significant loss has had a profound impact on the quality of education and highlights the urgent need for continuation and support of the reforms to improve and modernize the education system in the country. Moreover, over 40 percent of teachers are planning to leave the profession by 2030.[205] Creating a safe high-quality educational environment for every student is essential. It's not just about physical security, it's about fostering a space where children feel emotionally and psychologically safe to learn, grow, and thrive. By prioritizing physical, psychological, and social-emotional safety, educational institutions can lay the foundation for lifelong learning and well-being.

[204] Numbers provided by the Ministry of Education and Science (MoES) in Ukraine.
[205] Osvitoria & FAMA, "Ukrainian teachers: personnel potential" [in Ukrainian], 2024. Link

As in 2023 (and as noted in the RDNA3), the government and partners are prioritizing reconstruction and restoration of access to in-person education. The increasing negative impact of the invasion on the education and science sectors means that students and scientists are missing opportunities to study, learn, research, and innovate. In-person learning is essential for students to develop adaptability, communication skills, and prioritization abilities needed to thrive in a rapidly changing world. These social and emotional skills are crucial for success in both academic and personal life. Between December 2023 (RDNA3) and December 2024 (RDNA4), damage to education infrastructure increased by 60 percent. Despite continued investments in education in 2023 and 2024, the total needs increased by 80 percent between RDNA3 and RDNA4. These increases reflect continued escalation of the fighting as well as better data collection by the MoES and MDCT. In several areas, local governments are actively repairing minor damage in schools, preschools, and other educational facilities in an effort to promote recovery in education. Since January 2023, the share of educational institutions with bomb shelters has increased from 68 percent to 90 percent. In addition to these efforts, as noted in the RDNA3, the country's science sector is continuing to integrate into the European research ecosystem. This step not only provides Ukrainian scientists with greater opportunities for collaboration and facilitates knowledge exchanges, but also will help build the resilience of Ukraine's science sector.

Damage and Loss Assessment

Between February 2022 and December 31, 2024, an estimated 10.4 percent of the education infrastructure was damaged or destroyed, at a cost of around US$13.4 billion (Table 9).[206] A total of 3,373 educational institutions have suffered damage, of which 385 have been completely destroyed.[207] While school-level infrastructure accounts for most of the damage (45.3 percent of the total number of institutions affected), preschools and research institutions also have high damage rates, accounting respectively for 30 percent and 16.1 percent[208] of the total number of institutions damaged or destroyed. Moreover, although most damaged educational institutions are able to continue to operate online, preschools are the exception, and damage to preschools often leads to the discontinuation of early childhood education services. This limitation places increasing pressure on caregivers and limits their labor market participation. The oblasts of Donetska, Kharkivska, and Luhanska have experienced significant damage, concentrating more than 60 percent of the total cost of damage in the country. These estimates do not take into account the destruction of or damage to educational equipment (i.e., school furniture, textbooks, computers, etc.), suggesting that the actual cost of damage is likely to be higher than estimated.

Damage in the education and science sectors continues to affect learning and research, in turn causing economic losses estimated at around US$9.6 billion (Table 9). The combination of school disruptions, lower quality of instruction, less time spent on learning, and students' stress and deteriorating mental

[206] The total amount of damage reported in RDNA4 has increased 2.4 times compared to the results in RDNA3. However, this increase is not due to a rise in damage during 2024. It is attributed to improved estimations based on more detailed information provided by the MoES regarding the affected built areas.

[207] The total number of destroyed and partially damaged institutions is lower than in RDNA3, reflecting the correction of some records, mainly in territories temporarily not under government control. The increase in economic losses is due to better quantification of damage in terms of square meters affected.

[208] This figure covers vocational education and training institutions, professional pre-higher education institutions, and higher education institutions and research institutions.

health continues to drive substantial learning losses.[209] The cost of accumulated learning losses since February 2022 is estimated at around US$7.8 billion. This figure is expected to grow as the severe disruptions to the in-person learning continue—negatively impacting student's well-being and their income potential and ultimately leading to billions in additional losses beyond the RDNA time frame. The invasion has also led to research capacity losses, characterized by smaller investments in research and a decline in the number of scientific journal publications by Ukrainian academics; these trends hint at the difficulties faced by the science sector in the current context. Finally, losses include items such as reduced private sector turnover (US$580 million), decreased tuition collection (US$290 million), additional costs to use education infrastructure as shelters or community centers (US$85 million), and additional expenses for demolition and debris removal of damaged education facilities (US$758 million).

Girls and rural areas are disproportionately affected, leading to an increase in human capital inequalities. The impacts in this sector are disproportionately affecting girls, students from the poorest families, and those living in rural areas. While important disparities existed before February 2022, inequalities between students have increased since then, as demonstrated by PISA 2022 results. Girls' scores in reading declined more rapidly than boys', and students with lower socioeconomic status were significantly less likely than better-off peers to attain basic mathematics proficiency. Moreover, the rural-urban gap across subjects has substantially widened to represent more than four and a half years of learning difference between rural and urban areas (92 PISA points on average), indicating entrenched inequalities between cities and rural areas.[210] This was also evidenced by UNICEF in a comparative study of student performance in sixth and eighth grades between 2023-2024, concluding that students from urban schools show higher success in both mathematics and the Ukrainian language than their peers from rural areas.[211] This uneven accumulation of learning losses since the start of the pandemic in 2020 and since February 2022 is putting Ukraine's reconstruction in jeopardy, as human capital is expected to be a key driver of the country's recovery.

Recovery and Reconstruction Needs, including Build Back Better

The economic needs for reconstructing and restoring infrastructure required for high-quality in-person education are estimated at US$32.9 billion for the period 2025–2035 (Table 10). The reconstruction of educational institutions is expected to cost US$23.7 billion over 10 years. This cost takes into account building back better premiums to comply with the latest safety, green, and quality standards established by the GoU (including innovative approaches to teaching and learning), while also reflecting demographic patterns to ensure the sustainability of the education network. Meanwhile, the costs of restoring education service delivery are estimated at US$9.1 billion. A large portion of this financing is needed for the construction of bomb shelters (US$6.6 billion) as well as for interim measures to provide access to in-person education (such as school transportation and digital learning centers). In addition, flexible catch-up programs and psychosocial support are necessary to mitigate learning losses and to ensure that students have the tools to recover from missed instruction and trauma. It will be critical for the

[209] Learning loss refers to the decline in students' knowledge and skills due to disruptions in their education.
[210] Ukrainian Center for Education Quality Assessment et al., "National Report on the PISA 2022 Results" [in Ukrainian], 2023, Link.
[211] UNICEF (2024), Nationwide Monitoring Study of the Quality of Education in General Secondary Education Institutions during Martial Law.

government to continue to prioritize the provision of high-quality education; to move toward the resumption of prewar reforms at all education levels, from preschool to university; and to build back better in the education and science sector and respond to the needs of the postwar economy. It is important to note that these estimates assume that the situation does not deteriorate further.

Different levels of government and various development partners are supporting students and teachers in the most affected areas, but the needs far exceed what is being provided. The greatest needs are recorded in Donetska, Kharkivska, and Khersonska oblasts, where a high proportion of infrastructure has been damaged or destroyed, and where many children have been studying online since the pandemic started in 2020. Accordingly, partners are supporting students and teachers in these areas and providing them with educational materials, mental health and psychosocial support, and opportunities for catch-up learning. Meanwhile, the MoES is guiding the overall recovery of the education and science sectors and providing financial support to local governments for meeting essential needs, such as establishing bomb shelters, purchasing school buses, and improving accessibility for students with reduced mobility. Among other activities, steps have been taken to repair institutions, build new shelters, and provide psychosocial support to students and children, accounting for an investment of US$528 million. From this amount, US$94 million was allocated by the European Union targeting humanitarian projects focusing on Education in Emergencies, and US$185 million by the Education Cluster for catch-up programs. Finally, local authorities are acting as key drivers of the recovery process by financing and implementing repairs and reconstruction of education institutions. However, the needs of the education and science systems exceed by far what is currently being supported.

Limitations and Recommendations for Future Assessments

This assessment was conducted with available data from the MoES, the MDCT, and partners, but further analysis is needed. By relying on a variety of sources, the data used in this assessment offer a comprehensive view of the state of the education and science sectors since February 2022. To improve future assessments, the following elements can be considered:

- Consolidation of a dynamic national database of education infrastructure with all relevant characteristics, including information on damage, repairs, and reconstruction
- Assessment of human impact disaggregated by gender and age, to provide information that is currently not available
- Analysis of the network of education infrastructure, to identify the needs for priority reconstruction and optimization, considering access and demographic trends
- Analysis of the labor market needs at oblast level, to modernize the curriculum of selected vocational and higher education specialties and identify avenues for adult education
- Comprehensive assessment of the science and innovation system during the war, including losses in research capacity and potential for postwar growth.

Table 9. Education and science: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	2.2	240.1	247.7
Chernihivska	289.2	215.4	934.5
Chernivetska	-	220.0	243.8

Dnipropetrovska	438.9	674.0	1,256.2
Donetska	2,525.2	591.3	5,039.9
Ivano-Frankivska	-	320.2	232.4
Kharkivska	3,830.3	634.2	7,489.5
Khersonska	436.5	235.2	1,199.6
Khmelnytska	51.5	281.8	334.5
Kirovohradska	106.8	202.5	437.5
Kyiv (City)	930.3	957.0	1,995.4
Kyivska	608.9	546.3	1,368.7
Luhanska	1,242.8	217.8	2,749.4
Lvivska	347.5	572.5	937.9
Mykolaivska	724.9	292.9	1,746.4
Odeska	971.0	750.9	2,253.9
Poltavska	3.2	274.6	286.1
Rivnenska	0.5	330.2	244.8
Sumska	329.9	227.0	1,012.5
Ternopilska	31.0	225.1	287.2
Vinnytska	166.0	330.4	656.5
Volynska	0.5	288.2	233.4
Zakarpatska	-	333.5	232.4
Zaporizka	369.8	353.4	1,096.3
Zhytomyrska	5.4	277.4	290.3
Nationwide (no specific region)	-	37.0	114.5
Total	**13,412.4**	**9,628.9**	**32,921.5**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024. Loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026. The needs are assessed for the following 10 years.

Table 10. Education and science: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Preschools	774.1
	Secondary schools	2714.0
	Extracurricular education institutions	54.6
	VET institutions	652.0
	Professional pre-higher education institutions	683.0
	Higher education institutions	3013.8
	Specialized education institutions	245.7
	Special education institutions	100.3
	Adult education	8.7
	Research infrastructure	15517.3
	Ensuring safe access to education for all	6634.4
Service delivery restoration needs	Tackling learning losses and providing MHPSS	597.1
	Providing quality education and implementing reforms	1168.0
	Debris removal	758.4
Total needs		**32,921.5**
Total needs met		**528.4**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024. *Note:* MHPSS = mental health and psychosocial support; VET = vocational education and training.

Health

Context

Since February 2022, Ukraine's health sector has continued to face significant disruptions and damage. The number of damaged health care facilities and pharmacies has risen by 36.7 percent and 2.2 percent, respectively, compared to the RDNA3 (dated February 2024).[212] Health sector losses overall have increased by 8.9 percent. Recovery and reconstruction needs for the next decade have increased by 14.0 percent, while the immediate requirements for 2025 also remain high.

Amid these challenges, Ukraine's government has worked to maintain essential health services and to address rising demand for mental and physical trauma care. Building on health reforms initiated in 2016, efforts have focused on improving outcomes, system efficiency, and financial protection by restructuring financing, enhancing primary healthcare, defining health entitlements, and digitalizing medical records.[213] However, external support remains crucial to address capacity gaps caused by Russia's invasion of Ukraine. Inflationary pressures are also felt most strongly by the older persons and those with limited resources who have limited means to pay for services.

Damage and Loss Assessment

Since February 2022, the health sector has sustained an estimated US$1.56 billion in damage (Table 11). Of the 9,925 prewar public health care facilities, 1,603 (16.2 percent) have been partially or fully damaged. Among these are hospitals and clinics, specifically monoprofile hospitals (35.8 percent of the prewar stock), general hospitals (18.8 percent), and outpatient clinics (15.7 percent). The highest damage costs are recorded in Donetska (37.8 percent of total damage cost), Kharkivska (12.6 percent), Luhanska (12.5 percent), and Khersonska (7.3 percent) oblasts, where the fighting has been most intense. Additionally, 912 pharmacies and 624 ambulances have been damaged or destroyed.

The losses in this sector are estimated to be US$19.6 billion (Table 11). This figure encompasses the costs of debris removal, demolition of destroyed facilities, financial losses from damaged facilities, and additional health losses due to forgone care and heightened public health risks. Assumptions for debris removal and building demolition remain consistent with the previous RDNAs. As with previous RDNAs, health losses were calculated using disability-adjusted life years (DALYs), focusing on war-related conditions such as increased communicable diseases, neonatal and maternal mortality, and mental health issues. RDNA3 estimated a loss of US$15.9 billion in DALYs over 34 months since February 2022, with an additional period of 18 months. The new estimate represents a 23.2 percent increase, reflecting the growing disability and loss of life due to Russia's invasion of Ukraine, particularly from neonatal and mental health issues.

The availability of sexual and reproductive health services has been reduced since February 2022. Ukraine has maintained low maternal and perinatal mortality rates, even though Ministry of Health (MoH) data indicate a decline in access to sexual and reproductive health services for women and girls since

[212] Unless otherwise stated, all comparisons of percentages are between RDNA4 (the current assessment) and RDNA3 (the previous one). RDNA3 is available at Link.

[213] World Health Organization, European Union Delegation to Ukraine, U.S. Agency for International Development Mission in Ukraine, and the World Bank, 2022, "Priorities for health system recovery in Ukraine - joint discussion paper", link.

February 2022. This is evidenced by a decline in the number of specialists in some oblasts after 2022.[214] More broadly, the density of health workers in oblasts directly affected is low and has suffered greater attrition. Expanding the role of primary health care (PHC) providers in pregnancy care could help mitigate staffing shortages and help address rising pregnancy-related complications.[215]

The importance of mental health and psychosocial support continues to rise. The main drivers of psychological distress remain separation from family and loved ones, destruction, disruptions to support networks, and constant fear for the safety of loved ones. Women bear a disproportionate burden in this regard. Men often do not identify their need for psychological support due to gender stereotypes that stigmatize men who seek help. Marginalized groups, including gender and sexual minorities, continue to face barriers in accessing support due to stigmatizing attitudes, while the Roma population faces language and cultural barriers in addition to prejudice and discrimination.[216]

Recovery and Reconstruction Needs, including Build Back Better

The total recovery and reconstruction needs are estimated to be US$19.4 billion over 10 years (Table 11 and Table 12). The estimates for the reconstruction of health facilities are based on improved designs and service delivery models under the build back better framework and have been adjusted to incorporate the MoH's updated data on destroyed and damaged facilities. Of the total needs, approximately US$1.3 billion is required to reconstruct and refurbish damaged health facilities to meet the increased health demands. Further redevelopment of the hospital network toward the intended future state is estimated to require US$9.7 billion over 10 years.[217] As indicated above, expanding the role of PHC providers in providing a wider range of interventions, including mental health, non-communicable diseases and pregnancy care among others, could help mitigate staffing shortages. This change will also require training additional medical and paramedical staff.

For the restoration of service delivery, an estimated US$7.0 billion is necessary. This includes adapting PHC to address shifts in health care needs, population movements, and the disruptions caused by the COVID-19 pandemic, as well as the shortage of human resources arising from population displacement and lack of opportunities for skills development. The continued damage, internal displacement, and insecurity have also resulted in the loss of essential preventive care services. Various international financial institutions, among others, are providing resources to support recovery, reconstruction, and improvements in health care utilization across the population. Since March 2022, the European

[214] The data, from the United Nations Population Fund, show important reductions in the numbers of midwives in the following oblasts: Lvivska (reduction of 13 percent), Khmelnytska (13 percent), and Odeska (12 percent). The number of gynecologists has also decreased in the following oblasts: Donetska (reduction of 9 percent), Odeska (7 percent), and Kharkivska (7 percent).

[215] Pregnancy-related complications include an increase in Cesarean sections, which accounted for 30 percent of births in 2024, exceeding the recommended rate of 10–15 percent. Additionally, there is an increase in deliveries without prior prenatal care, particularly among teenage girls. See UNFPA, "Sexual and Reproductive Health and Rights Assessment in Ukraine: Desk Review Key Findings," 2024.

[216] Prior to February 2022, mental health concerns were already prevalent in Ukraine, and the prolonged conflict, internal displacement, and uncertainty about the future have further hindered access to the already limited mental health services for both adults and children.

[217] In the new environment, hospitals would serve populations ranging in size from 0.25 million (general) to 3.0 million (specialized).

Commission has coordinated medical evacuations to European countries and has successfully transferred over 4,000 patients to 22 member states/participating states.[218]

Rising prevalence of gender-based violence (GBV) in all forms, as well as women's vulnerability to sexually transmitted infections (STIs), necessitates a multifaceted response. Creating a comprehensive protocol to address all forms of GBV, including person-centered support, essential supplies, and considerations for women's specific physiological needs, will strengthen the response to rising GBV incidence, which disproportionately affects women and girls.[219] In parallel, efforts to combat STIs must be prioritized, given the heightened vulnerability of women and girls to GBV-transmitted STIs. Education, counseling, testing, and treatment for GBV-related cases should be integrated into broader initiatives to address STIs across the general population.

Limitations and Recommendations for Future Assessments

The availability of reliable data is improving but remains limited. The data used in this analysis is sourced from the damage registry maintained by the MoH, which is currently the most comprehensive data source available. Over time, the quality of data within the registry has improved. In RDNA3, the methodological approach was refined for data analysis, providing more accurate estimates of total damage costs. In RDNA4, the approach has been further refined with the integration of information from the RDDP. For future assessments, it is expected that the Ministry of Infrastructure's RDDP system will be more mature and serve as the primary source of information. To avoid duplicate efforts, the core business needs of the MoH (and other ministries) should be accommodated in the RDDP.

Table 11. Health: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	1.3	552.2	533.5
Chernihivska	67.1	524.6	476.4
Chernivetska	0.0	371.3	409.1
Dnipropetrovska	57.9	1,292.6	1,426.9
Donetska	587.1	2,102.0	2,024.9
Ivano-Frankivska	0.0	563.5	620.9
Kharkivska	196.1	1,224.9	1,279.7
Khersonska	113.2	429.4	489.0
Khmelnytska	0.8	512.3	564.7
Kirovohradska	0.0	421.8	414.8
Kyiv (City)	41.7	1,937.2	1,367.7
Kyivska	34.6	936.3	836.8
Luhanska	194.4	1,088.7	1,039.5
Lvivska	0.0	1,033.1	1,138.3
Mykolaivska	74.7	462.4	519.3
Odeska	12.7	1,139.5	1,081.3
Poltavska	0.1	637.4	621.0

[218] The medevac operations include medical evacuation flights transferring patients for treatment in the EU, carried out by member states and coordinated by the Emergency Response Coordination Centre (ERCC); preplanned flights for medevac patients using a medicalized plane and coordinated by liaison officers embedded in the ERCC; and an EU Medevac Hub for medical evacuations of Ukrainian patients, which allows them to receive treatment before traveling to a hospital in another European country.

[219] For more on incidence of forms of GBV, see Care International, "Rapid Gender Analysis: Ukraine," 2024, Link.

Rivnenska	0.1	476.2	525.0
Sumska	30.5	567.3	481.9
Ternopilska	0.0	426.0	469.3
Vinnytska	5.6	629.7	694.6
Volynska	0.0	425.9	469.3
Zakarpatska	0.0	518.9	571.7
Zaporizka	64.2	778.9	771.2
Zhytomyrska	44.0	492.3	543.7
Nationwide (no specific region)	29.1	69.7	10.0
Total	**1,555.2**	**19,613.9**	**19,380.5**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026; needs cover 10 years between 2025 and 2035.

Table 12. Health: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Demolition and debris removal	194.3
	Construction of new secondary care facilities	6,455.4
	Construction of new secondary care facilities (centers of excellence)	3,211.8
	Reconstruction of damaged secondary facilities	143.7
	Refurbishment and equipping of ambulance stations	9.2
	Construction of new primary care facilities	225.0
	Reconstruction of damaged primary care facilities	19.3
	Construction of new rehabilitation centers	495.0
	Reconstruction of rehabilitation centers	848.1
	Mental health centers	642.3
	Rebuilding of dental clinics	2.7
	Reconstruction of dental clinics	4.0
	Rebuilding of pharmacies	16.1
	Reconstruction of pharmacies	0.6
	Replacement of destroyed and damaged ambulances	44.9
	Rebuilding and reconstruction of other institutions	37.9
Service delivery restoration needs	Additional primary health care services and medicines	4,598.8
	Health emergency preparedness and response	665.6
	Additional mental health needs	943.9
	Additional rehab services	499.3
	Education needs	2.7
	Digitalization and telemedicine	200.0
	Emergency care equipment	120.0
Total		**19,380.5**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024.

Social Protection and Livelihoods

Context

Ukraine has shown resilience in facing the invasion but has extensive needs related to social protection and livelihoods. The estimated number of registered internally displaced persons (IDPs) is 4.6 million. The number of IFDPs decreased from 5.4 million at the time of RDNA2 and from 3.7 million at the time of RDNA3, while the number of returnees is 4.3 million as of October 2024.[220] Notwithstanding this decrease, millions of people face poverty, and the labor market situation remains highly uncertain. The loss of jobs and descent into poverty among Ukrainians could offset the country's development efforts. Further economic recovery may be constrained by the lack of workforce, which has dropped by 10.4 percent since February 2022.[221] At the same time, expanding the workforce creates additional needs related to activation and economic inclusion. In 2023, people with disabilities accounted for 3.9 percent of all employees hired, IDPs for 5.2 percent, and war veterans for only 0.8 percent.[222] There is a pressing need for quick and efficient job placements, as people engaged in defense should be reintegrated in the economy. The government also steps up efforts in inclusion and developing community services. The strategy was adopted for a complex deinstitutionalization reform involving all types of residential care institutions (for adults and children with disabilities and mental disorders, older persons, palliative patients, etc.). The government also updated the National Strategy for Reforming Institutional Care for Children and the associated Action Plan to address new challenges and emerging needs.

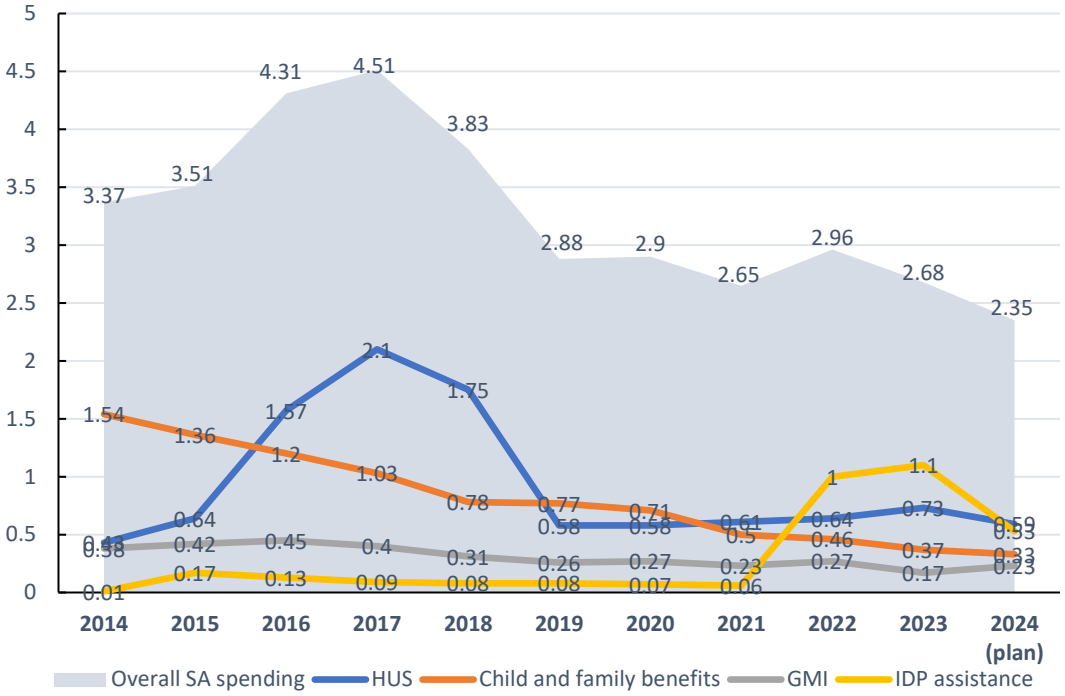
In 2024, expenditures on social assistance amounted to almost UAH 181.4 billion (US$4.3 billion).[223] The largest budget programs in 2024 were for social protection of citizens in difficult life circumstances. Social protection for IDPs and persons with disabilities amounted to UAH 95.1 billion (US$2.3 billion); Housing and Utilities Subsidies (HUS) and related benefits were UAH 43.1 billion (US$1 billion); social protection of families with children was UAH 25.3 billion (US$0.6 billion); and support for low-income families was UAH 17.9 billion (US$0.4 billion). The composition of Ukraine's safety net expenditures significantly changed between 2022 and 2024, reflecting the changing nature of needs (see Figure 33). Almost half of the social assistance budget (49 percent) is now allocated to benefits for people in difficult life circumstances, including social assistance for IDPs and persons with disabilities (whereas in 2021 just 25 percent was directed to these types of social assistance). Another 37 percent of the social assistance budget (50 percent in 2021) goes to assistance for low-income families, which in 2024 included Guaranteed Minimum Income (GMI), HUS, and other energy-related assistance benefits. Family and child benefits—of which there are over 20 types—make up 14 percent of social safety net spending (23 percent in 2021).

The GoU has implemented decisive measures to rebalance the system. This was done most notably by means and assets testing for IDP beneficiaries as well as capping of the benefit duration to discourage welfare dependency. The government has also implemented cross-registry beneficiary verification at enrollment using public registry data and other measures. As of January 2024, the social assistance

[220] IOM, "Ukraine—Internal Displacement Report—General Population Survey, Round 18," October 2024, Link.
[221] ILO, "ILO Supports Ukraine Recovery," June 27, 2024, Link.
[222] Helvetas Swiss Intercooperation, State Employment Service of Ukraine, Federation of Employers of Ukraine, "Ukraine Labor Market and Skills Needs Assessment: state, trends, and prospects". Link
[223] MoF data

program designed to offset living expenses for IDPs provided monthly support to around 2.5 million beneficiaries, while annual expenditures reached UAH 73.2 billion (US$1.7 billion), or 1 percent of GDP in 2023. As a result of the GoU's efforts improve the targeting of support, 2024 budget allocations for IDP assistance were 21 percent lower than those in 2023. As of July 2024, the number of beneficiaries had been reduced to 1.2 million.

Figure 33. Overall spending on social assistance, GMI, HUS, IDP assistance programs, and child and family benefits, 2014–2024 (% of GDP)



Source: Ministry of Social Policy data. *Note:* GMI = Guaranteed Minimum Income; HUS = Housing and Utilities Subsidy; IDP = internally displaced person; SA = social assistance.

Damage and Loss Assessment

The total cost of damage to the social protection and livelihoods sector is estimated at close to US$0.4 billion (Table 13). Damage concerns destroyed or damaged infrastructure, such as residential care units, sanatoriums, and social service delivery centers. As of December 2024, 200 social protection infrastructure assets had been damaged[224] or destroyed, at a cost of about US$399 million.[225] The greatest damage was sustained by Odeska (US$131.1 million), Kyiv city (US$81.3 million), Donetska (US$43.2 million), and Kharkivska (US$40.3 million) oblasts.

The losses in the sector are estimated to be US$87.3 billion (Table 13). These mounting losses stem from the continued nationwide loss of jobs and loss of household income from wages, as well as from several other factors: higher poverty, increased expenditures under existing means-tested social protection programs (which did not sufficiently adjust for inflation due to rising poverty and reduced fiscal space),

[224] Of assets categorized as damaged, 14 assets have since been functionally or completely restored.
[225] In RDNA3, the comparable numbers were 161 infrastructure assets destroyed or damaged at a cost of US$220 million.

and additional needs for programs such as survivor's benefits and payments and services for people with disabilities.

The largest share of losses comes from the permanent loss of jobs and workers. The overall unemployment rate has steadily declined, and an increase in real wages has been reported; but around a fifth of adults employed before February 2022 have reported losing their jobs,[226] and 56 percent report loss of income.[227] The calculation of losses used the average monthly salary in Ukraine before February 2022 (as of January 2022)— equivalent of US$534 at that time —and assessed the losses for 34 months following Russia's invasion of Ukraine and 18 months going forward. Losses stemming from expenditures on social protection programs are estimated at US$14.4 billion. At UAH 5,000 (US$119) in November 2024, the median nominal household income per capita was nominally 29 percent lower than the levels before February 2022 (UAH 7,000, equivalent of US$257 at that time). Considered against a cumulative inflation rate of 37.73 percent, this decline in household income highlights a significant loss of purchasing power for the Ukrainian population since February 2022. As of November 2024, 5 percent of the population reported that their household relied on social assistance for more than 50 percent of its income.[228]

Human impact: The human impact has been substantial. Poverty rose between 2021 and 2023 from 20.6 percent to 35.5 percent, per the National Academy of Sciences, as of December 31, 2024.[229] Poverty among households with children is estimated to have grown from 43.2 percent in 2021 to 65.6 percent in 2023. Among large families (with three or more children), the poverty rate was 84.7 percent; among households with children and an unemployed family member, the poverty rate exceeded 80 percent.[230] IDPs living in collective sites are particularly affected by further impoverishment; amongst them higher proportions of older people and people with disability. Members of the military, as well as civilians, have sustained injuries that could have devastating and long-lasting physical and psychological consequences, including disability. Since February 2022, the number of people with disabilities increased by more than 300,000. Around 58 percent of persons with disabilities report the need for financial assistance, and 20 percent report the need for employment services.[231]

Recovery and Reconstruction Needs, Including Build Back Better

The estimated needs in social protection and livelihoods sector amount to US$38.9 billion over 10 years (Table 14).[232] It is important to note the following:

Restoration of jobs remains the key priority for recovery. While some recovery of the labor market helped to contain the needs related to the restoration of jobs, rebuilding the country's economic potential will remain a formidable task; it requires restoring both output per person (which is expected to happen with broad recovery across sectors) and workforce potential. The latter poses significant challenges and

[226] World Bank, "Listening to Citizens of Ukraine: The Poverty and Human Impacts of Russia's Invasion of Ukraine," 2024, Link.
[227] Gradus Research Company, "Wartime Survey of Ukrainian Society/Tenth Wave," August 2024, Link.
[228] IOM, "Ukraine—Income, Social Protection and Coping Strategies In Ukraine," November 2024, Link.
[229] See Liudmyla Cherenko, "Measuring Poverty in the Conditions of War in Ukraine," Working Paper 1, Economic Commission for Europe Conference of European Statisticians, Workshop on Harmonization of Poverty Statistics, Geneva, November 27, 2024, Link.
[230] UNICEF, "Situation Analysis of Children in Ukraine," 2024, Link.
[231] Rating Sociological Group, "How Does Ukrainian Society Truly Perceive People with Disabilities?" November 15, 2023, Link.
[232] This amount does not include reconstruction needs already met (e.g., fully or functionally restored facilities).

drives large needs, including in relation to migration and displacement, female workforce participation, inclusion and war veterans. According to the State Employment Service, in 2024, 37.5 percent of businesses experienced difficulties in filling vacancies. The existing or worsening workforce deficit, along with skill mismatches, accounted for the majority of these difficulties.[233] According to the Centre for Economic Strategy, 1.4 million to 2.3 million Ukrainian refugees are unlikely to return to Ukraine due to the ongoing war and their adaptation to life abroad.[234] While the number was revised down from the previous survey due to potential double-counting, it is expected to rise over time. According to the UNHCR, the number of Ukrainians abroad rose by almost 200,000 in Q3 2024 alone, and the growth continued at the beginning of Q4. Risks of a further increase in migration outflows remain substantial.[235] The UNHCR assesses the number of refugees from Ukraine in Europe at 6.25 million, and according to the regional intention survey of November 2024, 61 percent plans or hopes to return while 27 percent was undecided.[236] In February 2024, these figures stood at 65 percent and 24 percent respectively. While these sentiment surveys are unlikely to be an accurate predictor for eventual returns, a strong labor market recovery with adequate wage growth and high participation rates is likely to provide a strong pull-factor for return.

The RDNA4 estimates that restoring workforce potential requires increasing the labor force participation rate to add about 2.3 million workers.[237] According to ILO's calculations, adding 2.3 million workers to the remaining workforce would require increasing the employment-to-population ratio from 47.4 percent to 56.1 percent (an 8.7 percentage point change), and specifically increasing the female employment-to-population ratio from 39.1 percent to 47.5 percent (an 8.3 percentage point change). These increases would require efforts and costs (through mobility grants, skilling programs, settling-in grants, or wage subsidies, and through returns and immigration schemes to ensure access to needed skills and the availability of care services to support women's increased participation in the labor force, as well as tailored employment programs to enable the reintegration of persons with disability into the labor market). In addition, special programs are needed to bridge gaps created by geographical mismatches and changes in labor market needs due to structural adjustments.

Structural reforms are needed to respond to demographic challenges created by the invasion. The key reforms are those of the pension system and labor regulations. Pension reform aims, in part, to prevent expenditures related to special pension benefits from escalating—a common trend in international experience. However, a more pressing need is to preserve the human capital of Ukraine by incentivizing workers to prolong their careers and minimizing their opportunities to retire early, especially in special pension schemes.[238] Labor regulation reform should be motivated by the need to preserve the mobility of

[233] SES dashboard, Link.
[234] Centre for Economic Strategy, "Ukrainian Refugees. Future Abroad and Plans for Return. Analytical Note," March 12, 2024, Link.
[235] National Bank of Ukraine, "Inflation Report," October 2024, Link.
[236] UNHCR, Lives on Hold: Intentions and Perspectives of Refugees, Refugee Returnees and Internally Displaced People From Ukraine, Report #6, November 2024. Link.
[237] This estimate is the same as that in RDNA3 and is a midpoint of mentioned surveys.
[238] In the general pension system, Ukraine did a significant step in the right direction with the 2017 law, which introduced: (i) linking retirement age to the individual length of service, (ii) tightening early retirement provisions and eliminating various privileges, (iii) reducing the accrual (from 1.35% to 1%), rationalizing benefit formula, and reducing guarantees, and (iv) introducing clear benefit indexation mechanisms that were first triggered in 2019.

the workforce and by the need for activation mentioned above, without losing sight of international standards on labor protection.

The focus should be on the rehabilitation of the affected groups, such as children (i.e., displaced children, orphans), IDPs, and persons with disabilities. This approach is critical for the reintegration of war veterans into society and is an efficient response to the multidimensional challenges faced by survivors. It could include the restructuring and modernization of relevant benefits, as well as services to reintegrate war veterans into civil life (e.g., psychological support, physical rehabilitation to improve functionality, and social rehabilitation to ensure inclusion in the community). To support IDPs' and returnees' integration into the local labor market, support is also needed for efforts to relocate businesses, build the capacity of private and public employment services (including assessment of labor market imbalances), and provide skills training for IDPs and returnees (particularly on entrepreneurship). Further efforts are needed to ensure that vulnerable groups can fully realize their rights. Similarly, it is critical to expand the availability of assisted living facilities and small group homes for older people and people with disability and the expansion and capacitation of respective social service delivery for assisted living, home-based care and social adaptation, as well as holistic recovery solutions for IDPs of old age or with disability who live in collective sites, to address the significant new needs and align with the deinstitutionalization reform.

Limitations and Recommendations for Future Assessments

This assessment does not incorporate the expected results of likely future changes to social protection policies aimed at more efficient use of public funds. The Ministry of Social Policy identified key problems in social protection and is drafting legislation and preparing cost estimates for the relevant reform priorities. Depending on their final form, the reforms will affect social protection needs differently. These reform priorities include the following:

- **Social insurance (pensions).** Unify and simplify the different pension guarantees, revise criteria for disability, establish a basic pension, and prepare for the introduction of a funded pension scheme to respond to declining pension benefit adequacy. Pension reform aiming to incentivize longer working careers and reduce opportunities for early retirement may come with initial costs.
- **Social assistance.** Transform the subsistence minimum into an anti-poverty tool (de-linking it from fees, fines, and penalties, as well as salaries in the budget sector); optimize the number of programs and improve the algorithms for social assistance benefits; separate social assistance payments from pensions; and strengthen labor incentives in social assistance programs to respond to insufficient targeting, weak behavioral incentives, and less adequate support. A better-designed GMI-type program could integrate several less effective benefits into the current Social Assistance to Low-Income Families program. This would impact assessment of the means-tested programs expenditures.
- **Social services.** Expand the use of complementary social services to help beneficiaries overcome difficult life circumstances; expand family-based and community-based modes of providing social services to respond to the underdevelopment of the social services system in Ukraine. The GoU is committed to improving coverage of the poor and vulnerable with integrated, high-quality, and user-

friendly social services based on individual needs. As these needs change, assessment of the cost for the restoration of social services will also be impacted.

For social protection programs that depend on changes in incomes and the cost of basic needs, there is high uncertainty beyond the immediate/short term. Expenditures for means-tested programs may change significantly depending on changes in household incomes and their relation to the cost of basic needs, expressed by the legislatively set income threshold.

Table 13. Social protection and livelihoods: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	-	-	-
Chernihivska	15.3	0.5	22.0
Chernivetska	-	-	-
Dnipropetrovska	6.7	0.7	10.0
Donetska	43.2	5.0	65.7
Ivano-Frankivska	-	-	-
Kharkivska	40.3	5.0	61.6
Khersonska	0.6	0.1	1.0
Khmelnytska	-	-	-
Kirovohradska	-	-	-
Kyiv (City)	81.3	2.6	46.5
Kyivska	38.5	1.1	48.4
Luhanska	17.3	1.6	25.9
Lvivska	0.3	0.0	0.5
Mykolaivska	6.8	0.2	9.8
Odeska	131.1	13.2	197.3
Poltavska	Insufficient data	Insufficient data	Insufficient data
Rivnenska	-	-	-
Sumska	9.7	0.9	14.6
Ternopilska	-	-	-
Vinnytska	1.9	0.1	2.8
Volynska	-	-	-
Zakarpatska	-	-	-
Zaporizka	5.7	0.2	8.2
Zhytomyrska	Insufficient data	Insufficient data	Insufficient data
Nationwide (no specific region)	-	87,288.2	38,336.6
Total	**398.7**	**87,319.4**	**38,850.8**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026; needs cover the period 2025–2034.

Table 14. Social protection and livelihoods: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2034)
Reconstruction needs	Demolition and debris removal	31.2
	Repair and reconstruction cost	497.2
Service delivery restoration needs	Employment-related measures	14,738.4
	Means-tested benefits	15,463.9
	Benefits for internally displaced persons	2,760.1
	Restoration of social services	1,149.2

	Military pensions and other long-term benefits related to Russia's invasion of Ukraine	4,210.8
Total		**38,850.8**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024.

Culture and Tourism

Context

The diversity and richness of Ukraine's culture and cultural heritage has been severely impacted. The culture and tourism sector has been affected both directly (for example, through shelling and military operations near heritage sites) and indirectly (through disruption of the practice and transmission of living heritage, which is crucial for the identity of communities in Ukraine). The sector's contribution to the economy has consequently been affected; the livelihoods of cultural bearers, cultural creators, and others employed in the creative sector disrupted; and access to culture and cultural life and to the enjoyment of cultural rights, especially among more vulnerable communities, impeded.

Historic cities, cultural sites, built heritage, cultural institutions, and cultural collections remain under daily threat of bombing. Physical damage to (or looting of) museums highlights the urgent need for improved inventories and collection management. Attacks on cultural heritage continue to be documented, including sites protected under the World Heritage Convention. Following the attack on Lviv on September 3-4, 2024, damage was reported to 22 sites situated near cultural property protected by UNESCO's Enhanced Protection mechanism and in the buffer zone of a World Heritage property, L'viv—the Ensemble of the Historic Centre. Six of the damaged sites were marked with the emblem of the 1954 Hague Convention. On November 14, 2024, attacks on the City of Odesa significantly damaged heritage buildings, 19 of them located within another World Heritage property, the Historic Centre of Odesa. Repeated strikes continue to make historic buildings more vulnerable to future damage caused by blast shock and vibration, even if they are not directly hit. On October 28, 2024, there was damage to the Derzhphrom building (House of State Industry) in Kharkiv, a nationally important monument included on both the Tentative List of UNESCO World Heritage and the International List of Cultural Property under Enhanced Protection. Both its architectural value and its physical integrity are threatened.[239] Thus for the first time since February 24, 2022, a property inscribed on the UNESCO International List of Cultural Property under UNESCO Enhanced Protection in Ukraine was damaged. Cultural heritage sites in the four oblasts affected by the destruction of the Kakhovka Dam continue to be exposed to the dual threat of riverbank erosion and the direct impact of artillery shelling and mines. These sites also face the risk of illicit excavations; the UNESCO-supported survey conducted by the Ukrainian Institute of Archaeology in Mykolaivska oblast (October 2023) found that 13 of 47 surveyed sites were damaged by illicit excavations. Assessment of the archaeological sites exposed by the draining of the Kakhovka Reservoir should be continued. There are 1,700,000 museum items remaining on the temporarily occupied territory of Ukraine. Approximately 35,000 museum items were stolen from state museums that were under temporary occupation. As a result of shelling, 162 items from museum collections were destroyed. Overall, the most critical sectoral losses include revenue losses from tourism in Odeska oblast.

Cultural heritage near or within areas of active hostilities remains under threat. Conditions of several cultural sites of national importance have worsened since they were damaged in 2022, making them vulnerable to direct or indirect effects of attacks. Some assets have also been repeatedly shelled, in some

[239] Following the October 28, 2024, attack in Kharkiv, Ukraine asked the Committee for the Protection of Property in the Event of an Armed Conflict to apply its Ad Hoc Monitoring mechanism. At its 19th meeting (held in December 2024), the Committee agreed to initiate the monitoring.

cases after repairs and urgent interventions were completed.[240] Three sites—the Historic Centre of Odesa, inscribed in January 2023; Kyiv: Saint Sophia Cathedral and Related Monastic Buildings, Kyiv-Pechersk Lavra; and L'viv—the Ensemble of the Historic Centre—remain on the List of World Heritage in Danger, as the protection of the Outstanding Universal Value of these properties cannot be guaranteed due to Russia's invasion of Ukraine. In December 2024, at the request of the Ukrainian authorities, the UNESCO Committee for the Protection of Cultural Property in the Event of Armed Conflict granted temporary Enhanced Protection to Babyn Yar, the site of one of the largest "Holocaust by bullets" massacres, and to the Odesa Literary Museum. This brings the number of Ukrainian cultural properties benefiting from this status to 27.

The impacts continue to hamper the practice and transmission of intangible cultural heritage (ICH). Living heritage not only provides a foundation for communities' identity and well-being; it also provides livelihoods for many of its bearers and practitioners and their families. Russia's invasion of Ukraine has affected the workshops of ICH bearers, their access to raw materials, and the places and spaces needed for practicing ICH. Traditional markets, for example, are today nonexistent or radically diminished.[241]

Several key recovery efforts have continued in 2024. These include support for damage assessment and monitoring, both satellite imagery–based and on-site verification; training and capacity building in emergency documentation; risk prevention and management; in situ preventive works; winterization of damaged cultural and historic assets; stabilizations and urgent inventories; provision of energy and relevant supplies for collections; recovery and reconstruction of cultural heritage of Ukraine; support for the livelihoods of artists, especially female artists in country and abroad; and support for development of emergency cultural projects across the country, as well as for the integration of ICH into school-based education. Furthermore, the Action Plan for Safeguarding of Culture (coordinated by the Ministry of Culture and Strategic Communications and UNESCO and endorsed in June 2024[242]) has sought to anticipate long-term investments, such as a structured capacity-building program, review and harmonization of the cultural legal framework, and definition of structured policies, in part to facilitate the EU integration process. The Ministry of Culture and Strategic Communications has sought to elaborate the 2025 Workplan Plan as part of "Cultural Sovereignty," which is a priority of the presidential Resilience Plan**,** as well as the 2025–2030 National Strategy for the Sector of Culture.

Damage and Loss Assessment

As of December 31, 2024, the total cost of damage in the sector was estimated at US$4.11 billion (Table 15**).** Damage concerns (i) buildings, historic cities, and sites imbued with recognized cultural/social values (US$2.98 billion); (ii) moveable cultural properties, collections, and repositories of culture (US$193

[240] St. Catherine's Cathedral in Kherson (Khersonska region) was damaged in August 2023 and again in December 2024; Kurakhovsky city center of culture and leisure activities in Kourakhove (Donetska region) was damaged between November 2023 and May 2024 and again between June and October 2024; a church in Zmiivka (Khersonska region) was damaged between September 20, 2023, and April 10, 2024, and again between April 10 and July 3, 2024; the Church of the Intercession in Klishchiivka (Donetska region) was damaged in March 2023 and again in September 2023; the Odesa Fine Arts Museum (Odeska region) was damaged in July 2022 and again in November 2023; the Kherson Regional Universal Scientific Library in Kherson (Khersonska region) was damaged in August 2022 and again in November 2023.

[241] Based on the preliminary study conducted by UNESCO in 2023–2024 on the situation of the ICH sector during the war.

[242] The endorsement by more than 30 countries occurred at the "Towards the Recovery of the Culture Sector of Ukraine" conference held June 6-7, 2024, in Vilnius, Lithuania.

million); (iii) buildings/workshops/ateliers dedicated to cultural and creative industries (CCIs) (US$274.7 million); and (iv) tourism facilities (US$650.1 million). The most impacted oblast continues to be Kharkivska, which accounts for more than 23 percent of the damage, followed by Donetska at about 13.5 percent and Odeska at 7.7 percent.

Between RDNA3 and RDNA4, 704 newly damaged assets were detected, increasing the total number from 4,779 to 5,483. Out of the 704 newly recorded assets, 101 assets have been extracted from the RDDP**.** RDNA4 also achieved more accurate data derived from verified data for archaeological sites. CCIs, which refers now to a baseline of 63,116 estimated entities engaged in cultural and creative practices, were identified through focus surveys.[243] RDNA4 also provides more accurate damage calculations for museum collections. Privately owned/residential historic buildings constitute, at this stage, 9 percent of the total cost of damage.

The losses in the sector—including revenue losses from tourism, art, entertainment, recreation, CCIs, cultural education, debris removal, and valued asset protection—are estimated at US$29.3 billion (Table 15). The increase in losses since RDNA3 can be attributed to the increased number of damaged sites, ongoing attacks, and continuous deterioration of cultural assets and infrastructure, which compound the sector's vulnerabilities and financial strain. RDNA4 also uses more granular data for losses compared to RDNA3, accounting for sales records in 2022 and 2023, which were previously not available and resulted in underreported losses. The most significant losses are in information technology and services (US$11.5 billion), arts and entertainment (US$5.6 billion), and tourism and hospitality (US$4.9 billion). Unlike damage, revenue losses remain highly concentrated in the capital; at US$13.1 billion, these losses amount to almost 60 percent of the total loss.

The human impact within the sector continues to be significant. By affecting ICH, the social fabric also has been affected, as well as the daily practices and livelihoods of living heritage practitioners, producers, community members, cultural professionals, and artists. Many practitioners left the country in the early stages of the invasion and found refuge in neighboring countries, where they could continue their practice. Mobilization is also decreasing the availability of specialized workers and professionals to carry out emergency and recovery efforts in the cultural sector. Most ceremonies, festivals, performances, markets, and fairs have been put on hold, depriving artists, practitioners, and others of livelihoods. Furthermore, many craftspeople have lost their workshops, tools, and materials due to the shelling. Some raw materials are no longer available, and only some ICH professions are able to replace in-person sales with online sales.[244] The National Registry of Intangible Cultural Heritage of Ukraine now includes more than 100 elements (up from 77 at the end of 2023); of these, 16 elements are already registered as needing urgent safeguarding.[245]

[243] UNESCO, "Focus Study on War Impact on CCIs," July 2023.

[244] Based on the preliminary study conducted by UNESCO in 2023–2024 on the situation of the ICH sector during the war.

[245] Government of Ukraine, "Intangible Cultural Heritage of Ukraine [Нематеріальна культурна спадщина України]," Link. Among the elements in need of urgent safeguarding are festive and memorial porridge of Avdiivka, Donetska oblast, tradition and preparation technique; tradition of unscrewed pipe of Polissia, Rivnenska oblast; traditional bee craft in Svatisky district, Luhanska oblast.

In 2022, the GoU estimated that about 37 percent of workers employed in the creative industries had lost their jobs and that over 20 percent of creative industry professionals had left the country. Most CCI categories experienced an average decline of 20 percent in their employee numbers. Approximately 60 percent of cultural workers were female before February 2022, and this proportion has remained substantial, at around 53 percent.[246] Interviews and data analysis highlight a gender pay gap across sectors and categories: on average, women in CCIs earn approximately 22 percent less than their male counterparts, even when holding the same positions. Additionally, according to Resolution No. 245 of the Cabinet of Ministers of Ukraine, dated March 10, 2022, most expenditures for the sector were directed to the state budget reserve fund, and expenditures for culture and art from local budgets were also reduced. These reductions represent a departure from the trend three years before 2022, when local budgets increased cultural spending by 3 percent. According to the Ministry of Culture and Strategic Communications, the number of civil servants employed by state culture institutions under the ministry payroll decreased by almost 10 percent from February 2022 to July 2024 (falling from 153,565 to 138,793). Only 76.67 percent of these employees are reported to work in person at their respective institutions; 3.7 percent of the remaining personnel work remotely, and 3 percent reportedly remain in areas not under government control. Among the personnel employed before February 2022, 4 percent have reportedly moved abroad.[247]

Recovery and Reconstruction Needs, including Build Back Better

Over the next 10 years (2025–2035), the total needs for recovery and reconstruction, including service delivery restoration, amount to US$10.5 billion (Table 16). This represents an increase of 17.5 percent since RDNA3, which is partly due to the recent increase in scale, intensity, and magnitude of attacks on cultural sites, including sites inscribed on the UNESCO World Heritage List. The oblast with the largest share of needs remains Kharkivska, which accounts for more than 25 percent of total needs, followed by Donetska at about 13.4 percent and Odeska at 7.5 percent.

The needs prioritized in RDNA3 remain valid. Needs include damage assessment and documentation, as well as emergency and risk preparedness measures for immovable and moveable cultural properties; restoration and reconstruction; further safeguarding of CCIs and ICH; and operational costs associated with the rebuilding. Satellite imagery–based verification of direct and indirect damage to cultural property—carried out by UNESCO in cooperation with the United Nations Satellite Centre (UNOSAT)—remains crucial for producing a verified, evidence-based database as well as prioritizing interventions at the community level. Further assistance is required to support long-term reforms and capacity building, in particular for enhancing professional curricula, skilling and reskilling cultural professionals, and ensuring the integration of culture. In 2024, the EU's Union Civil Protection Mechanism (UCPM) was activated in response to a request for in-kind assistance to protect cultural heritage, including fire security, protective and storage materials, and vehicles.

[246] UNESCO, "Focus Study on War Impact on CCIs," July 2023.

[247] Since February 2022, the number of civil servants employed by state institutions under the Ministry of Culture and Strategic Communication payroll or by national institutions in the field of culture reportedly has declined by 9.5 percent. State enterprises and institutions belonging to the sphere of management of the Ministry of Culture and Strategic Communication have lost a total of 1515 employees since February 2022.

It is highly recommended that the protection of cultural heritage be increased along with preventive conservation of sites and assets at risk of further damage or destruction. Assessment and documentation of cultural assets in need of protection remain a priority that designated authorities should address through a more systematic approach and management structure. Integrating all dimensions of culture remains critical to the recovery and reconstruction plans, city master plans, and territorial plans, especially for 401 historical settlements listed by the Resolution of the Cabinet of Ministers of Ukraine of July 26, 2001, No. 878.

Coordination among actors and partners remains crucial. The regular updating of the Action Plan for Safeguarding of Culture also remains an essential tool for international and national coordination.

Culture is a powerful driving force in a country's emergency response, recovery, and reconstruction. It is an essential people-centered tool for fostering and preserving community resilience, collective memory, social cohesion, and collective and individual well-being. Developing the conditions that allow cultural institutions and communities to resume activities is paramount. Professionals' technical and management skills must be enhanced to enable them to cope with and respond to emerging urgent challenges.

Investing in the culture sector is now more essential than ever. A comprehensive recovery plan is still needed to rebuild the sector. This plan should include alignment with international standards, enhanced legal protection and governance, and protocols and guidelines for protecting and recovering cultural heritage. Revisions to state policies are necessary to support cultural heritage preservation, institutional capacity, and regulations, mainly to protect heritage from urban development pressures. Ensuring the quality of interventions and harmonization of practices also remains essential. Restoration of infrastructure and assets to pre-invasion levels must incorporate inclusive BBB principles to reduce risks and vulnerabilities to future shocks. All these priorities must be accompanied by a substantial inclusive capacity-building program in order for the sector to sustain the results achieved. The recovery plan will require significant funding, including increased cultural expenditures from local budgets.

Limitations and Recommendations for Future Assessments

Monitoring cultural properties in inaccessible areas, especially smaller-scale properties with local significance, remains challenging. Assessing damage to underwater heritage remains difficult for Ukraine, with its 2,700 km coastline. Without initial baselines and data, identifying damage and losses for ICH is ongoing and will require further in-depth surveys and studies. More broadly, measuring damage to intangible heritage is inherently challenging. Quantitative and disaggregated data on human resources in the sector are also generally unavailable. Quality data are lacking for tourism; private travel services' and tour operators' contribution to the tourism sector are not easily captured, as licenses are not mandatory for such occupations. Data on needs met were not available for this assessment and thus not deducted from the identified needs. The private sector's contribution to the sector's recovery and reconstruction is also not featured, as data were not available for this assessment.

Table 15. Culture and tourism: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	7.1	100.5	13.8
Chernihivska	140.1	238.9	377.4

Chernivetska	2.7	30.8	5.3
Dnipropetrovska	148.3	41.0	363.4
Donetska	557.9	200.2	1,411.6
Ivano-Frankivska	3.3	377.0	6.5
Kharkivska	980.5	1,373.8	2,693.3
Khersonska	375.5	122.4	887.7
Khmelnytska	34.6	101.9	93.8
Kirovohradska	7.7	347.4	20.7
Kyiv (City)	216.2	17,151.5	531.6
Kyivska	162.0	1,075.2	440.8
Luhanska	284.0	83.0	692.5
Lvivska	100.3	1,087.5	213.0
Mykolaivska	250.0	79.9	702.9
Odeska	320.1	2,113.1	789.8
Poltavska	17.9	1,502.3	44.8
Rivnenska	2.7	29.3	5.2
Sumska	125.9	104.1	334.0
Ternopilska	2.4	121.9	4.8
Vinnytska	24.9	77.6	65.0
Volynska	4.0	134.1	8.5
Zakarpatska	2.5	52.9	5.6
Zaporizka	309.0	2,682.7	704.0
Zhytomyrska	29.7	92.4	72.5
Nationwide (no specific region)	5.0	2.2	19.6
Total	**4,114.2**	**29,323.7**	**10,508.3**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2025; needs cover 10 years between 2025 and 2035.

Table 16. Culture and tourism: Recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Damage assessment, monitoring, detailed documentation, and harmonized digitalization	45.0
	Emergency measures for immovable cultural properties (shoring, propping, structural reinforcements, sheltering, and protection measures, including debris removal and demolition) and moveable properties (inventories, preparedness plans, storage management, etc.)	1,192.5
	Repair of assets as feasible to restore function; preservation of built heritage, historic cities, and cultural infrastructure to prevent/mitigate demolition of sites/buildings of cultural significance	795.0
	Reconstruction/restoration of assets	5,750.8
Recovery needs	Strengthening of legal protection of the cultural sector and normative frameworks during and after the war	59.8
	Reinforcement of professionals' capacities	618.4
	Support for the restoration of the creative industry and safeguarding of intangible cultural heritage	968.4
	Operational costs	778.4
Total		**10,508.3**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024.

PRODUCTIVE SECTORS

Agriculture[248]

Context

Russia's invasion of Ukraine continues to have severe impacts on Ukraine's agriculture sector. Before, the sector played a significant role in the country's economy. It contributed 10 percent to GDP, employed 14 percent of the labor force, and accounted for 41 percent of total exports.[249] The sector has been very significantly impacted. As noted in the RDNA3, the total planting area in 2022 decreased by 20 percent compared to 2021, and 15 percent of agricultural capital stock was already damaged during February-May 2022. The grain and oilseed production in 2022 fell to 73 million tons, a decrease of 30 percent compared to 2021.[250] The lower agricultural production, coupled with rising prices of inputs (particularly fertilizers and diesel), significantly reduced farm incomes. The blockade of the Black Sea during the early months led to a sharp drop in agricultural exports, which primarily relied on Black Sea ports. Although alternative routes helped increase grain and oilseed exports in subsequent months, volumes remained below February 2022. As a result, domestic farm gate prices for wheat and corn declined by 45 percent between January and June 2022, while global prices increased by 15 percent. The Black Sea Grain Initiative, launched in July 2022, increased exports; but the logistical costs remained high, putting pressure on farm gate output prices. Favorable weather conditions in 2023 led to the recovery of grain and oilseed production (which reached 79 million tons), but levels remained much below those of 2021 (105 million tons).[251] In June 2023, the destruction of the Kakhovka Dam resulted in a threefold increase in damage to the aquaculture and fishery industries. Following the termination of the Black Sea Grain Initiative in August 2023, Ukraine launched its own temporary maritime corridor, which greatly improved export logistics and bridged the gap between domestic and global prices. This led to an increase in agricultural prices in Ukraine in 2024 compared to previous years. At the same time, 2024 yields were negatively affected by adverse weather conditions and droughts in certain regions. With fighting ongoing and with approximately 21 percent of Ukraine's farmland in areas not under government control, agricultural production remains significantly below pre-invasion levels.[252]

Damage and Loss Assessment

Total damage in the agriculture sector amounts to US$11.2 billion, while losses amount to US$72.7 billion (Table 17), noting adjustments to assumptions indicated below. The damage includes the partial or complete destruction of storage facilities, fisheries and aquaculture, and perennial crops, as well as the forced slaughter of livestock. It also encompasses the destruction and theft of machinery and equipment and the theft of inputs and outputs. Machinery and equipment damage accounts for the largest share of total damage (58 percent), followed by damaged storage facilities (17 percent) and stolen inputs and outputs (17 percent). As of December 2024, the damage in the sector had increased by only 9.2 percent

[248] The agriculture sector includes crops, livestock, and fisheries/aquaculture. It excludes irrigation and forestry as well as the food industry and agro-logistics, which are included in other parts of the RDNA.
[249] Data from State Statistics Service of Ukraine, State Employment Center.
[250] Data from State Statistics Service of Ukraine.
[251] Ibid.
[252] Center for Food and Land Use Research, Kyiv School of Economics, "How Land Resources Changed in Ukraine after 24th of February, 2022" [in Ukrainian], Link.

compared to December 2023 (RDNA3), as most assets located in active fighting zones had already been damaged during the first year after Russia's invasion of Ukraine. The highest damage values were recorded in Luhanska, Zaporizka, and Khersonska oblasts, collectively representing 65 percent of the total damage.

Damage estimation in RDNA4 differs in some respects from damage estimation in RDNA3. In contrast to RDNA3, RDNA4 used updated numbers from the State Statistics Service of Ukraine to estimate the livestock and perennial crop damage. The approach to estimating damage for the Donetska oblast was also revised: in the previous RDNAs, damage in Donetska oblast was estimated by extrapolating results of the survey conducted in Kharkivska oblast, whereas in RDNA4, the share of damaged assets in Donetska was based on a proxy using the share of farmlands not under government control. Finally, the assumptions for Kharkivska, Zaporizka, and Khersonska oblasts were revised to accommodate the ongoing active ground battles in these regions.

The losses amount to US$72.7 billion. These include the following: loss of farm income (due to lower or forgone production); lower farm gate prices (due to export logistic disruptions); higher farm production costs (due to higher prices of fertilizers and fuel); the cost of land recultivation after mine-related surveying, clearance, and land release operations;[253] the halt of fishing operations; and the cost of debris removal from damaged and destroyed agricultural storage facilities. The largest loss, accounting for 51 percent of the total losses (compared to 49 percent in RDNA3), is attributed to the decrease in annual crop production. The loss caused by the decrease in farm gate prices of export-oriented commodities, such as wheat, barley, corn, and oilseeds, is the next largest, accounting for 34 percent of losses. Other significant losses include higher input costs (6 percent), lower livestock production (5 percent), lower perennial crop production (2 percent), and land recultivation–related losses as well as fisheries and aquaculture losses (1 percent combined) and debris removal losses. Compared to RDNA3, the losses increased by only 4 percent, with further information below. Khersonska, Zaporizka, Kharkivska, and Donetska oblasts experienced the largest losses.

Several factors contributed to the changes in estimated losses between RDNA4 and RDNA3. The primary drivers of increased estimates include the incorporation of 2025 production losses for annual crops; the extension of the time frame for losses in perennial crop production; the addition of an extra year of losses in the livestock, fishery, and aquaculture sectors; updated estimates for damaged farmland requiring recultivation; and the addition of a new category for debris removal. However, revisions based on newly available data led the assessment team to adjust some of the estimates downward. First, the 2023 harvest levels were higher than expected, prompting a reassessment of production losses for 2023 annual crops. Second, the yield decrease in the 2024 calendar year was due to adverse weather conditions; this led the team to revise the assumed share of the yield decrease attributable to war-related changes in production technology from 70 percent to 20 percent, as input accessibility significantly improved in 2024. This adjustment also resulted in a downward revision of the estimated production losses for 2024 annual crops. Third, the release of new data on livestock production required another adjustment. In RDNA3, survey results led to an assumption of war-related decrease in livestock productivity, but this was not

[253] Note that the losses from mines on agricultural land and the need for the survey, clearance, and release of agricultural land are not included in the agriculture sector estimates. They are presented separately in the section on cross-cutting sectors.

corroborated by the newly released official data. Consequently, losses from reduced livestock productivity were excluded from the assessment.

Human impact: The livelihoods and food security of residents in the affected regions has been severely impacted. By October 2024, nearly 40 percent of settlements in Donetska and 18 percent in Kharkivska faced "extreme" or "extreme+" levels of food security vulnerability, up from 20 percent and 2 percent correspondingly this summer, indicating deteriorating food security in frontline areas.[254] In these two regions alone, there are 25 settlements where over 25 percent of residents were unable to access adequate food despite significant humanitarian assistance.[255]

Recovery and Reconstruction Needs, including Build Back Better

The total recovery and reconstruction needs in the public sector are estimated at US$55.5 billion over 10 years (Table 18).[256] To ensure that the agricultural sector recovers, drives the overall economic recovery, serves as a decent income source for farmers and rural population, and provides food for the Ukrainian population, several investments are especially important. These include investments to address liquidity constraints, promote resilience to disasters and climate change, support integrated food-energy systems, and strengthen the agricultural public institutions to effectively support recovery and reconstruction. Compared to RDNA3, needs decreased by 1 percent, primarily due to the downwards revision of the sum needed to strengthen Ukrainian public institutions. Other parts of needs increased, the increase occurred primarily due to the US$1 billion increase in reconstruction needs, which reflects the increase in damage and the addition of the debris removal category.

Needs are concentrated in the following areas:

- Completing reconstruction or replacement of damaged assets while accommodating the build back better principle and conducting debris removal and demolition for damaged property
- Supporting the sector's longer-term recovery and sustainable development by advancing diversification and inclusiveness, efficient value chains, climate resilience, and social sustainability
- Scaling up investment in agricultural public institutions to promote evidence-based policy making on agriculture and rural development, which includes agricultural services (sanitary and phytosanitary measures, food safety, land monitoring and registration, soil testing for precision agriculture, agricultural research and extension services, training and retraining of farmers and staff of agribusinesses, etc.) so the institutions can better support the sector's climate-resilient recovery.

The recovery of the sector has already begun, with an estimated US$873 million in needs addressed through state funding and donor support between 2022 and 2024. In recent years, the largest share of public and donor financing has been allocated to interest rate compensation programs (49 percent) and grants supporting agricultural production by small farms (22 percent). However, the US$873 million does

[254] REACH Initiative, "Ukraine Humanitarian Situation Monitoring: Evolution of Needs (July–October 2024)," December 2024, Link.
[255] Ibid.
[256] The estimate of the needs is based on recent GoU documents, including the 2022 National Recovery Plan and the 2023 Recovery and Reconstruction Plan for Agriculture, and on consultations with experts, government representatives, and the donor community.

not account for needs met through private sector investments due to data availability constraints. At the same time, private investment holds significant potential for driving the reconstruction and recovery of the sector.[257]

Limitations and Recommendations for Future Assessments

For losses, this assessment relies on the rich and reliable official information; but data on damage remains limited, and damage assessment relies on several assumptions. This is particularly true in oblasts most heavily affected, significant portions of which are not under government control. This situation makes conducting a comprehensive survey or using other methods to obtain reliable data impossible. Addressing this limitation will be critical once the security environment allows for such research.

Another challenge in the damage assessment is the inability to reliably estimate damage for certain categories of assets commonly used in agricultural businesses, such as agricultural buildings, including livestock facilities. The lack of aggregate baseline information for these assets hinders accurate assessment. Collecting such data would significantly enhance the comprehensiveness of the analysis, and the team is planning to expand the set of categories analyzed in this study in future iterations. Thus, an additional enhancement to the damage estimation would be incorporating data from the RDDP for categories not currently included in the analysis. Moreover, to provide a holistic view both of the war's impact on the agricultural sector and of reconstruction and recovery needs, it is essential to include estimates for irrigation, food processing, agro-logistics, agricultural land surveys, demining, and land release operations. These aspects are addressed in other sections of the RDNA report, which provide additional information to clarify the overall situation.

One potential direction for future assessments is to adopt a more granular view of the impact on Ukrainian agriculture. This could include a detailed breakdown of damaged assets and incurred losses by ownership type, distinguishing between public and private entities. Additionally, incorporating a gender breakdown in the analysis would provide valuable insights into how different demographics have been affected, enabling more targeted and equitable recovery efforts.

Table 17. Agriculture: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	0.8	2,947.8	1,571.2
Chernihivska	240.5	3,827.2	2,348.1
Chernivetska	0.0	355.1	189.1
Dnipropetrovska	1.0	3,621.7	1,930.3
Donetska	1,247.5	4,559.8	4,409.6
Ivano-Frankivska	-	687.7	366.2
Kharkivska	1,407.7	5,813.4	5,162.4
Khersonska	2,227.1	7,319.1	7,324.0
Khmelnytska	-	3,242.2	1,726.5
Kirovohradska	1.1	3,255.1	1,735.3
Kyiv (City)	-	-	-

[257] IFC, *Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine: Volume 2, Sector Assessments*, 2023, Link.

Kyivska	459.1	2,793.9	2,104.4
Luhanska	1,749.6	2,793.2	3,989.8
Lvivska	-	1,049.2	558.7
Mykolaivska	476.0	3,399.9	2,458.1
Odeska	1.0	2,512.4	1,339.6
Poltavska	0.4	3,926.0	2,091.3
Rivnenska	-	1,166.3	621.1
Sumska	123.3	3,866.6	2,235.2
Ternopilska	-	1,856.2	988.5
Vinnytska	-	4,246.8	2,261.5
Volynska	-	1,094.8	583.0
Zakarpatska	-	281.6	150.0
Zaporizka	3,304.1	6,025.0	8,218.4
Zhytomyrska	0.0	2,049.3	1,091.3
Nationwide (no specific region)	-	-	-
Total	**11,239.1**	**72,690.6**	**55,453.6**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024. Loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026; needs cover 10 years between 2025 and 2035.

Table 18. Agriculture: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Storage facilities	2,262.9
	Farm equipment and machinery	7,210.0
	Perennial crops	621.8
	Livestock, fisheries, and aquaculture	375.9
Recovery needs	**Support for immediate agricultural production recovery**	
	Interest rate compensation (credit program 5-7-9)	3,250.0
	Partial credit guarantees for agriculture	620.3
	Grants for agricultural production by small farms (per hectare, per livestock unit, and others)	1,140.0
	Storage bags and other support for on-farm storage	12.0
	Recultivation of damaged farmlands	1,100.0
	Agricultural inputs to support production	20.0
	Support for sustainable recovery of agriculture	
	Debris removal and demolition	289.2
	Investment grants	10,006.0
	Value chain development in agricultural sector	10,025.0
	Advancement of climate-smart technologies adoption	15,000.0
	Other support for longer-term recovery	500.5
	Support for agricultural public institutions and programs	3,020.0
Total needs		**55,453.6**
Total needs met		**872.8**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024.

Irrigation and Water Resources

Context

Ukraine's irrigation and water resource sector has been severely impacted, causing extensive damage to critical infrastructure and disrupting vital irrigation systems. The irrigation and drainage infrastructure has suffered attacks, such as the destruction of the Kakhovka Dam in June 2023, and has experienced widespread damage from fighting, vandalism, and defensive measures like inundations. Preexisting challenges have been compounded, including underutilization, poor maintenance, and rising energy costs. Operational irrigation has fallen drastically from the prewar level of 738,000 ha, further weakening sector productivity. Key subsectors, such as irrigation of high-value crops (like tomatoes, potatoes, and rice) and drainage systems vital for cereal and beef production, have been severely disrupted, threatening national food security and economic stability.

During 2024, new challenges emerged. Frequent power outages at pumping stations delayed water services, thereby reducing water availability for farmers and other users. An 80 percent rise in energy prices in 2024 further strained farmers' economic capacity; many were forced to halt irrigation, leading to reduced crop yields and broader economic losses. These disruptions also worsened the technical condition of hydraulic infrastructure, increasing future repair costs. Although the State Agency of Water Resources (SAWR) has deployed nearly 100 generators to address energy shortages, additional investments in solar energy and other alternatives are urgently needed. Water deficits have also worsened in areas with deteriorating delivery infrastructure. Territorial communities, local farmers, Water User Organizations (WUOs), and water supply enterprises face growing pressure to adopt integrated water management approaches, including water retention from surface water and groundwater sources. Modern flexible infrastructure is needed to adapt to water and energy deficits while ensuring irrigation and other critical services.

Recovery efforts have included ongoing reforms, the establishment of 54 WUOs, and subsidies under Resolution No. 1110 to rehabilitate pumping stations and construct modern systems such as sprinkler and drip irrigation. These initiatives align with the emphasis of the Water Framework Directive (2000/60/EC) on sustainable and integrated water management. Also relevant to recovery efforts is the GoU's adoption in 2024 of nine river basin management plans that contain lists of measures for 2025–2030.[258] Investments in restoring and modernizing local water infrastructure, alongside enhanced cooperation between institutions, are essential to address current challenges and ensure resilience in Ukraine's water sector.

Damage and Loss Assessment

The total cost of damage to the sector is estimated to be US$746.3 million (Table 19). This is considered as a minimum and (as noted in the limitations subsection below) could be revised based on additional data. The total cost includes damage to movable assets, buildings, and agency premises of both the State Agency of Melioration and Fisheries (SAMF) and SAWR; damage to farm infrastructure and reservoirs; and damage related to the destruction of the Kakhovka Dam (which by itself accounts for US$359.3 million).

[258] EU4Environment, "Ukraine RBMPs (2025-2030)—Summary Factsheets," Link.

This estimate excludes damage to real estate temporarily not under GoU control, which cannot be assessed yet. Damage to Ukraine's irrigation and water resources sector is concentrated in Khersonska, Zaporizka, and Chernihivska oblasts, which account for damage of US$362.2 million, US$120.2 million, and US$90.2 million respectively.

The losses in the sector are estimated to be US$872.3 million (Table 19). This total is also considered as a minimum, given limitations on data collection noted in the limitations subsection. Losses include operational setbacks caused by serious setbacks to the sector's financial basis from reduced water service payments, disrupted water-use rent contributions to the state budget, and damage to system management. Payment challenges are tied to flooding, mining for defense, and farm system deterioration due to inadequate maintenance, staffing, and inputs.[259] Losses in profit for irrigated areas are accounted for in the agricultural sector's overall loss assessment. The most significant losses are recorded in Donetska (US$171 million), Zaporizka (US$168 million), and Sumska (US$157 million) oblasts.

Human impact: The destruction of the Kakhovka Dam and of canals, pumps, and reservoirs has disrupted water access for agriculture and households, severely affecting rural economies and increasing environmental and health risks from pollution and inadequate water treatment. The loss of governance in water resource management hinders restoration efforts and extends service disruptions.

Recovery and Reconstruction Needs, including Build Back Better

The total reconstruction and recovery needs are estimated at US$10.9 billion over 10 years (Table 20). Investments focus on restoring damaged systems in line with build back better principles, and on implementing compensatory programs to sustain and enhance production levels. These include constructing new water retention infrastructure, water transfer canals, and small-scale irrigation and drainage systems that can store surface water, groundwater, and floodwaters for irrigation and other community needs. Priority is given to areas with current water deficits, particularly regions affected by the Kakhovka Dam's destruction, and those at risk of future droughts due to climate change. Khersonska oblast has the highest investment needs at an estimated US$1.85 billion; this includes major repairs to the Kakhovka Dam and pumping station to restore irrigation for 780,000 ha. Other priority areas are Odeska oblast, where 49 percent of irrigation systems (27 out of 55) covering 80,790 ha are not working; Zaporizka oblast, where 57 percent of systems (12 out of 21) impacting 206,430 ha are nonfunctional; Poltavska oblast, where 83 percent of irrigation systems (10 out of 12) covering 19,640 ha are out of service; and Rivnenska oblast, where 209 drainage systems covering 390,380 ha are in need of recovery and modernization. There is a critical need for targeted recovery and modernization efforts to restore functionality and enhance productivity.

The difference between damage and recovery needs lies in the broader scope of rebuilding efforts, which extend beyond immediate repairs to include modernization, expansion, and resilience-building measures for sustainable water management. While damage assessments focus on physical destruction,

[259] Farm-level data and evaluation of loss categories for irrigation and drainage systems are from the Institute of Water Problems and Land Reclamation and the NGO Primavera.

recovery needs address future resilience, institutional reforms, and upgraded infrastructure to meet evolving challenges and standards.

Some recovery efforts have already taken place. Examples include SAWR's repair of the Shandor gate at the Kazarovytska Dam and reactivation of the water monitoring lab in Donetska oblast. Broader reforms are essential for improving management efficiency, ensuring transparent prices, facilitating investments, and completing infrastructure transfers to WUOs to support modernization and sector resilience. Monetary data on needs already met are not available yet.

Limitations and Recommendations for Future Assessments

The sectoral assessment was conducted with preliminary data and faced significant limitations that affect its comprehensiveness. Data were unavailable from regions experiencing active hostilities or temporarily not under government, meaning that reporting of damage, losses, and needs is incomplete. The assessment also did not differentiate assets by type (e.g., canals, pumps), as data were aggregated by regional water management organizations. Additionally, key regional data, particularly from severely impacted areas, remain incomplete. The full extent of losses caused by the destruction of the Kakhovka Dam has yet to be assessed; approximately 350 irrigation pumping stations and 1,100 km of irrigation canals are currently nonoperational, severely disrupting irrigation in Khersonska, Dnipropetrovska, and Zaporizka regions. Finally, the role and contributions of the private sector in the recovery and reconstruction efforts remain unclear, highlighting a need for future assessments to explore their potential involvement and outlook.

Future assessments should prioritize detailed and continuous water quality monitoring, especially in areas impacted by the Kakhovka Dam destruction, and should address declines in water availability. Expanding local field surveys is critical to capture both direct and indirect impacts on water resource management and ensure accurate and comprehensive data collection. Governance and resource loss analysis should include monetary estimates of losses associated with destroyed monitoring infrastructure and reduced water resources and should account for the challenges in inaccessible regions. These steps will provide a more robust understanding of sectoral needs and inform effective recovery and modernization strategies

Table 19. Irrigation and water resources: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	-	7.8	149.0
Chernihivska	90.2	-	184.9
Chernivetska	-	-	16.2
Dnipropetrovska	0.5	41.9	439.7
Donetska	1.2	171.4	351.7
Ivano-Frankivska	-	-	12.2
Kharkivska	5.8	43.0	252.8
Khersonska	362.7	-	1,847.7
Khmelnytska	-	9.6	52.0
Kirovohradska	0.0	-	12.0
Kyiv (City)	-	-	-
Kyivska	55.0	65.0	497.0
Luhanska	0.5	-	250.6

Lvivska	0.0	-	122.9
Mykolaivska	7.7	-	590.9
Odeska	0.0	68.8	364.2
Poltavska	0.0	-	127.3
Rivnenska	58.7	-	184.9
Sumska	32.0	157.3	134.0
Ternopilska	0.0	-	109.0
Vinnytska	-	-	21.7
Volynska	2.5	26.0	204.9
Zakarpatska	0.0	-	251.9
Zaporizka	120.2	164.9	563.4
Zhytomyrska	5.8	-	163.6
Nation-wide (no specific region)	3.3	116.6	4,031.5
Total	**746.3**	**872.3**	**10,936.0**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026; needs cover 10 years between 2025 and 2035.

Table 20. Irrigation and water resources: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Reconstruction, overhaul and modernization of state irrigation infrastructure	2,804.3
	Reconstruction of hydraulic structures of protective arrays of Dnipro reservoirs	78.4
	Irrigation system upgrading and expansion in four priority systems: Kakhovska, Pivnichno-Rogachinska, Sirogozska and Prinzovska	1,278.3
Service delivery restoration needs	Restoration and modernization of water management infrastructure	1,439.8
	Restoration of the state water monitoring system's functionality	1.5
	Restoration and construction of centralized water supply of rural settlements using imported water	93.4
	Restoration of drainage systems	1,100.3
	Flood risk management measures	642.3
	Water resources accumulation projects	1,500.0
	River revitalization measures	1,562.0
	On-farm irrigation technology/equipment support to Water User Organizations	327.1
	Solar energy alternatives for pumping stations	108.5
Total		**10,936.0**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024.

Commerce and Industry[260]

Context

Businesses in Ukraine, in particular small and medium enterprises (SMEs), continue to be greatly affected, yet demonstrate resilience. Prior to February 2022, commerce and industry played a crucial role in Ukraine's economy, generating about a third of the country's GDP and providing employment for about 6.0 million people (circa 40 percent of total employment).[261] Since February 2022, a large number of firms have exited the market: approximately 1 in every 9 to 10 firms closed its operations between 2021 and 2022.[262] The private sector was also adversely affected by demand shocks—driven by reduction in domestic consumer spending, loss of access to crucial export markets, and heightened uncertainty about sales outlook—and supply shocks, including physical damage, labor and input shortages, logistical disruptions, and limited access to financing. After a sharp decline in the aftermath of the invasion, Ukraine showed signs of partial recovery, with the number of active businesses in commerce and industry rising by 8.1 percent in 2023 from a 15 percent drop in 2022.[263] Sales by firms partially rebounded but remained below prewar levels, with a median drop of 35 percent in 2022 followed by an increase of +9 percent in 2023.[264] Firms in eastern and southern part of Ukraine were affected the most, prompting closures and relocations; commerce (wholesale and retail trade) accounted for 43 percent of relocated firms as of March 2024.[265] Firm support programs have become an important lifeline for SMEs and businesses in general, and they have helped beneficiaries perform better than firms without support; but programs need revamping in order to increase outreach and impact.

Damage and Loss Assessment

Total damage to commerce and industry facilities between February 2022 and December 31, 2024, is estimated at US$17.5 billion (Table 21), an 11.9 percent increase above the US$15.6 billion estimated in the RDNA3 as of December 31, 2023.[266] Most of the damage (84 percent) was to industry, with the rest to commerce. About half of the damage (55 percent) occurred to large and medium-size enterprises[267], both public (US$1.9 billion)[268] and private (US$7.7 billion). Roughly 44 percent of the damage estimated for those firms (US$4.2 billion) was due to the destruction of two steel plants in Donetska oblast, the Azov Steel Plant and the Ilyich Iron and Steel Works in Mariupol. According to a

[260] Industry, as defined by this chapter, covers manufacturing (including agro-processing) and services not covered elsewhere in the report. Services related to culture, tourism, finance, and creative industries, such as hotels, tour operators, and advertisers, are excluded. Restaurant and food services are included under commerce and industry. Commerce covers wholesale and retail trade and warehousing.

[261] State Statistics Service of Ukraine (SSSU), 2021 data, available at Link.

[262] World Bank, *Ukraine: Firms through the War 2.0*, 2024, Link.

[263] SSSU data on number of active business entities by type of economic activity, available at Link. Data are broken down by number of persons employed in 2016–2023. In 2023 the number of active businesses in industry, construction, and wholesale and retail trade reached 879,300 entities, of which 733,000 were private entrepreneurs.

[264] World Bank, *Ukraine: Firms through the War 2.0*, 2024, Link.

[265] Institute of Analytics and Advocacy, "Relokatsia biznesu v umovah viyny," May 30, 2024, Link.

[266] Data for damage and losses were primarily provided by the Kyiv School of Economics.

[267] Large and medium enterprises are considered those with assets that exceed €10 million and employ more than 50 persons; as per methodological notes of the State Statistics Committee of Ukraine. Link.

[268] The estimate includes damage reported for 44 large and medium-size state-owned enterprises as of December 31, 2024. However, the available information is likely to underestimate damage due to limited access to production sites near the front lines.

2024 Word Bank study,[269] 1 in 4 firms that reported damage experienced more than 60 percent of assets damaged. While about one-fourth of the capital assets were destroyed in the immediate aftermath of the invasion and firms' fixed assets continued to drop, with a median change of -24.9 percent in 2022 and -17.7 percent in 2023. Firms in eastern and southern part of Ukraine continued to suffer the most destruction of fixed assets, with drops of 16 percent and 15 percent respectively. More than 80 percent of total damage occurred in five industrialized regions affected by military activity: Donetska, Kharkivska, Kyivska, Zaporizka, and Mykolaivska oblasts.

Total losses reached about US$213.9 billion (Table 21), estimated for 52 months ending June 30, 2026. Losses were calculated using the same methodology as for the RDNA3 based on updated sales reports and official statistics for 2023[270], and are larger than the entire GDP of Ukraine. Losses also include agreed estimates for demolition and debris removal, calculated based on damage. Total losses are about US$142.3 billion for industry and about US$71.6 billion for commerce. The Kyivska oblast (including Kyiv City) and the Donetska, Zaporizka, and Dnipropetrovska oblasts, which host large numbers of industrial and commercial entities, incurred the largest losses (cumulatively more than 75 percent of the aggregate losses for the sector). Attacks on Ukraine's power grid caused regular electricity outages as well as collateral asset destruction. Air raid alerts also caused significant economic disruptions, particularly hurting sales in the commerce sector (including e-commerce).[271] Retailers lost on average 3.4 working days each month during 2024 due to air raid alerts, with the retail centers in Sumska, Kharkivska, and Donetska regions reporting downtime totaling more than 40 percent of operating hours.[272] Even the threat of air raids can disrupt business operations, as a 10 percent increase in the number of air raids is associated with a 0.75 percent decrease in sales.[273]

Human impact: The human impact on the sector has been significant, related to loss of income and jobs, displacement of people, worker shortages, and service in the military. High-intensity missile attacks along with power outages have prompted continuous displacement of people. Unemployment remained at 13.9 percent of the economically active population in mid-2024, an improvement over the share in 2022 of 21.1 percent.[274] The labor market showed signs of recovery, as firms in some sectors saw improvements in employment trends between 2023 and 2024; construction went from -32 percent to -10 percent, manufacturing went from -23 percent to +4 percent, and commerce remained at -17 percent. However, migration and military service continued to create labor shortages for private businesses, especially in the east and south due to proximity to the front line (with respectively 71 percent and 79

[269] World Bank, *Ukraine: Firms through the War 2.0*, 2024, Link.
[270] The loss assessment was done based on actual sales data for 2022–2023 for commerce and industry and the difference in the IMF's growth scenarios for Ukraine *with* and *without* the war. The commerce and industry income growth was estimated for both scenarios, and then the difference between the two (for the period of 52 months—duration of the invasion as of December 31, 2024, plus next 18 months) was adjusted to net out inter-industry double-counting and focus on value added, based on prewar intermediate consumption coefficients (2019–2021 averages). The estimates for the two different growth trajectories were based on the economic growth forecasts by the IMF before February 2022 (World Economic Outlook Database, October 2021 Edition, Link) and on the updated growth trajectories (World Economic Outlook Database, October 2024 Edition, Link).
[271] World Bank, *Ukraine: Firms through the War 2.0*, 2024, Link.
[272] For the duration of air raid alerts during working hours of shopping centers, see Ukrainian Council of Shopping Centers, "Share of Air Alarms: Interactive Map," Link.
[273] World Bank, *Ukraine: Firms through the War 2.0*, 2024, Link.
[274] National Bank of Ukraine, "Inflation Report, July 2024," Link.

percent of vacancies unfilled).[275] More than 60 percent of firms reported labor shortages and hiring problems in September–November 2024, in contrast to about 50 percent in the earlier months of 2024.[276] Women-led firms faced greater challenges than their male counterparts, experiencing a more significant hit to sales and capital as well as more significant financial troubles. Employment in women-managed businesses also declined more steeply than in male-managed businesses, and women-managed businesses had more trouble filling job openings. Unemployment caused by war-related displacement and damage remains high, as only 45 percent of internally displaced people have been able to secure a job in their new location, with an additional 7 percent self-employed.[277]

Overall, negative effects on Ukraine's private sector have been diverse. These include disruptions in accessing domestic and international markets, limited compliance with international standards, curtailed access to finance, interruptions in the supply of essential resources, inadequate demand, labor and skills shortages, and increased uncertainty. The extent of these impacts varies depending on firms' sector, location, market presence, and size. Firms in the main active fighting zones in the east and south experienced the most significant damage. Among firms that closed temporarily or permanently, approximately 32 percent cited insufficient demand as the main reason (down from 43 percent), while 26 percent cited security concerns (slightly up from 25 percent), 17 percent cited cash-flow challenges (no change), 15 percent cited damage to the business (down from 21 percent), and 12 percent cited labor shortages (down from 19 percent). Overall, as of mid-2024, firms were operating at 49 percent of capacity utilization on average.[278]

At the same time, Ukrainian firms that continued operation after February 2022 have adapted their business strategies proactively and resiliently. More businesses remained open in the first half of 2024 than in 2023 (86 percent compared to 76 percent); and 11 percent of firms that closed in 2023 resumed operations in 2024. Following a dramatic drop in investment (-76 percent) after the invasion, there was an increase of 31 percent in investment in the first half of 2024, and a 49 percent increase in manufacturing specifically. Energy efficiency was a priority area for investment, with 35 percent of surveyed firms planning to invest more; manufacturing led the charge with 49 percent of firms, followed by construction and utilities with 37 percent, and commerce with 28 percent.[279] Although firms have been resilient, effective, and efficient, private sector support policies and programs will remain crucial drivers of the recovery.

Recovery and Reconstruction Needs, including Build Back Better

Total recovery and reconstruction needs for the commerce and industry sector are US$64.4 billion, estimated for 10 years (Table 22).[280] To rebuild and modernize infrastructure and assets (buildings, equipment, and inventory) under a build back better approach, total reconstruction needs for commerce

[275] World Bank, *Ukraine: Firms through the War 2.0*, 2024, Link.
[276] Institute for Economic Research and Policy Consulting, "Ukrainian Business throughout the War (October 2024), 30th Monthly Survey of Ukrainian Enterprises" [in Ukrainian], Link.
[277] Inna Studennikova, "Labor Market in Wartime: Demographic Challenges for Ukraine," Vox Ukraine, September 12, 2024, Link.
[278] World Bank, *Ukraine: Firms through the War 2.0*, 2024, Link.
[279] Ibid.
[280] Needs estimates for RDNA4 are a function of damage and loss estimates and rely on the RDNA3's improved data coverage (for both damage and loss) and updated methodology (for loss).

and industry are estimated at US$23.2 billion. In line with the damage and losses, the largest needs are in Kyivska, Donetska, Zaporizka, and Dnipropetrovska oblasts. Some needs in commerce have been met amid reconstruction efforts and partial economic recovery, especially near big cities such as the areas around Kyiv, Dnipro, Odesa, Kharkiv, and Lviv. In some cases, large retail shopping centers managed to repair damage, rebuild, and resume operations in 2023–2024.[281] A partial estimate of SMEs' overall needs met through investment loans amounts to US$3.1 billion.[282] Most of these investments have been made by manufacturing, commerce, and services firms, and have focused on restoring and replacing fixed assets (such as facilities and equipment). Needs to restore service delivery edged down from US$46.8 billion at the end of 2023, amid lower annualized losses backed by better economic forecasts; they total US$41.2 billion, including demolition and debris removal costs.

Private investment could cover almost 78 percent (US$51 billion) of estimated needs in commerce and industry.[283] The private sector could cover most of the needs in the commerce sector, but increasing the share of private investment in industry would require addressing several constraints that predate the invasion, including heavy regulation, lack of competition, the distortive presence of state-owned enterprises (SOEs) in some subsectors, limited access to finance, and outdated infrastructure.[284] The Government of Ukraine has undertaken an ambitious reform program to mobilize private capital for the recovery and reconstruction through the 2025 Ukraine Reforms Matrix[285] and Ukraine Plan 2024–2027,[286] which envision a comprehensive program of economic reforms to overhaul the business environment, streamline and harmonize regulation with the EU, facilitate trade and competition, and mobilize both foreign and domestic investment, among other reforms. The ultimate aim is to increase the competitiveness of the Ukrainian economy. The sustained implementation pace of the program under the Reforms Matrix, where 199 out of 531 reforms have already been achieved, demonstrates Ukraine's commitment to mobilizing the private sector for recovery and reconstruction.

Revitalizing the commerce and industry sector is a priority. Millions depend on this sector for their jobs and livelihoods, and it contributes significantly to critical needs during reconstruction, such as construction, food industry businesses, and key manufacturing. Ukraine's economic recovery depends on harnessing the dynamism and competitiveness of the private sector, and its multiplier effect, to sustain an export-led growth and contribute to job creation, innovation, and overall sustainable development. Surveyed firms identified the following priority areas requiring increased public support: improving business regulation (76 percent of firms), facilitating business linkages and value chains access in line with international markets requirements (71 percent), increasing access to markets including through better compliance with standards (69 percent), addressing labor shortages and skilled workforce

[281] According to the Ukrainian Council of Shopping Centers, 35 large shopping centers have been destroyed or damaged since February 24, 2022. At least 17 of those damaged had been restored by the end of 2024, and several malls expect to reopen in 2025. Ukrainian Council of Shopping Centers, "Maksym Gavryushin, URTC: Not All Shopping Centers Have Time to Recover" [in Ukrainian], September 2, 2024, Link.
[282] Business Development Fund (BDF), "Schotyzhneva informatsiya pro rezultaty Derzhavnoi programy Dostupni kredyty 5-7-9," Link.
[283] Based on estimates from IFC, *Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine*, Link.
[284] IFC, *Creating Markets in Ukraine: Country Private Sector Diagnostic*, 2021, Link.
[285] Cabinet of Ministers of Ukraine, "2025 Ukraine's Reforms Matrix," Link.
[286] Ukraine Facility, "Ukraine Plan 2024–2027," Link.

(69 percent), providing tax exemptions and incentives (68 percent), and increasing access to finance (52 percent).[287]

In both the short term and medium to long term, investments should seek to build back better, emphasizing green and digital technologies to build resilient and competitive businesses with products and processes aligned to EU standards. State support programs for entrepreneurship have become an important lifeline for SMEs and businesses in general, but they require strategic refocusing and optimization in line with international best practices. Firm support programs deployed by the GoU immediately after February 2022 show a significant potential for revamping, rationalization, and greater outreach. Only 8 percent of firms have participated in support programs, with a lower rate of 6 percent among SMEs. On the one hand, limited outreach and low awareness of the public offering impacted the use of these programs: only 26 percent of firms were aware of them, and 15 percent of firms were unable to find a suitable program. On the other hand, participating firms performed better than nonparticipants in sales (-8 percent versus -15 percent), employment retention (-2 percent versus -4 percent), and investment (+124 percent versus +22 percent) as of March 2024. These findings suggest that revamped firm support programs could also help accelerate the adoption of EU climate and environmental standards.[288] The Affordable Loans 5-7-9% government program remains an important source of financing for small businesses in the commerce and industry sector. Since the beginning of 2024, the total value of loans to nonagricultural SMEs under the program reached US$765 million, of which 57 percent was disbursed to woman-led enterprises.[289]

Limitations and Recommendations for Future Assessments

The definitions and assumptions used for this sector are the same as those noted in the RDNA3. Industry, as defined by this chapter, covers manufacturing and services not covered elsewhere in the report. It excludes manufacturing associated with transportation, military, and energy, but includes agro-industry from the processing stage. Services related to culture, tourism, finance, and creative industries, such as hotels, tour operators, and advertisers, are also excluded. Restaurant and food services are included under commerce and industry. Commerce covers wholesale and retail trade and warehousing. This chapter includes impacts on both public and private firms. To the extent possible, the assessment included data from the RDDP, but coverage of commerce and industry assets remained limited.[290] The assessment follows the PDNA methodology and presents conservative estimates.

This analysis faced the following limitations, which hopefully can be addressed in subsequent analyses:

- Regional data were unavailable for some oblasts that have likely been impacted.
- For commerce, no regional breakdowns of the data were available. An indirect method (primarily based on housing damage estimates) was used to assign damage and loss proportions based on the impacts on small firms, since most commerce firms are small.

[287] World Bank, *Ukraine: Firms through the War 2.0,* 2024, Link.
[288] Ibid.
[289] Based on information provided by BDF as of end of November 2024.
[290] As of January 2025, the RDDP database included information on damage to 3,800 nonresidential real estate objects in industrial and commercial use with a total reported area of 12 million m^2. Both the number of the objects and their aggregate area represent a limited coverage compared to the aggregate number of damaged assets in the sector.

- Damaged assets and values were not available for most firms, especially smaller ones. The assumptions used were based on financial reporting and led to best estimates.
- Losses were calculated based on sales losses transformed into value-added estimates via historical average sales to value-added shares. For large and state-owned enterprises, the sales losses likely did not cover the full scope of losses, since firms that did not suffer any physical damage likely still suffered economic losses (e.g., from business disruptions due to electricity blackouts and missile attack warnings). Ideally, data for estimating losses in productivity and other indirect costs, like rental fees, could be collected for subsequent analyses.
- Sector breakdowns of small firms were not available and could not be indirectly estimated.
- Needs calculations were based on calculated damage to the Commerce and Industry sector. Given the immense nationwide losses faced by this sector, these calculations may be underestimated.

Table 21. Commerce and industry: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	10.2	2,123.7	402.3
Chernihivska	0.0	166.0	22.1
Chernivetska	81.7	889.4	273.2
Dnipropetrovska	479.1	39,398.3	8,255.8
Donetska	6,471.6	5,149.0	10,319.5
Ivano-Frankivska	0.0	3,875.4	696.3
Kharkivska	2,203.9	8,507.6	4,681.1
Khersonska	240.5	471.9	416.0
Khmelnytska	28.8	1,346.8	292.6
Kirovohradska	9.0	1,271.3	253.2
Kyiv (City)	867.9	9,041.3	3,083.4
Kyivska	2,896.3	74,373.8	17,635.3
Luhanska	681.0	641.3	1,069.6
Lvivska	37.5	2,561.2	528.5
Mykolaivska	1,000.6	4,452.2	2,311.7
Odeska	272.0	8,576.5	1,997.4
Poltavska	438.9	6,056.7	1,727.8
Rivnenska	0.8	585.8	109.6
Sumska	239.0	1,979.6	717.0
Ternopilska	1.6	648.4	120.4
Vinnytska	6.3	1,814.7	343.5
Volynska	0.2	2,316.1	428.9
Zakarpatska	0.3	193.7	43.7
Zaporizka	1,374.8	36,498.0	8,272.4
Zhytomyrska	112.7	962.5	344.2
Nationwide (no specific region)	44.4	6.6	66.1
Total	**17,499.4**	**213,907.8**	**64,411.6**

Source: Assessment team. *Note*: Damage covers 34 months between February 24, 2022, and December 31, 2024; losses cover a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months through June 30, 2026; needs cover 10 years between 2025 and 2035.

Table 22. Commerce and industry: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Industry	19,839.3

	Commerce	3,364.3
Service delivery restoration needs	Industry	23,130.8
	Commerce	15,796.1
	Debris removal	2,281.0
Total		**64,411.6**
Total needs met[a]		**3,066.0**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024. a. Based on the data on subsidized lending provided by the Affordable Loans 5-7-9 percent program from February 2022 until December 2024, with a focus on loans for recovery, rebuilding, and investment made to the commerce and industry sectors, as reported by the Business Development Fund (BDF).

Finance and Banking

Context

The Ukrainian financial sector continues to be significantly impacted. Since February 2022, the banking sector has accounted for US$2.6 billion of loan loss provisions for expected war-related credit losses,[291] while the nonperforming loan (NPL) ratio has risen from 27 percent to 31 percent (as of November 2024). About 85 percent of the sector's NPLs are concentrated in state-owned banks (SOBs) (up from 82 percent as of November 1, 2023, and reported in RDNA3), while NPL ratio in SOBs as of December 1, 2024, was 44 percent (down from about 50 percent as of November 1, 2023). The financial sector continues to remain stable, operational, profitable, and liquid, supported by emergency measures and broader policies that have generated substantial interest earnings and a rising deposit base. In Q4 2023, the National Bank of Ukraine (NBU) successfully transitioned from an exchange rate peg regime to a managed flexibility regime. The banking system successfully migrated to a new three-tier capital structure in Q3 2024. As a result, most banks continue to be well capitalized, with the total capital adequacy ratio amounting to around 17 percent in November 2024.[292] The NBU's 2023 resilience assessment of the 20 largest banks (accounting for over 90 percent of banking system assets) showed that most banks adequately assessed potential credit losses and provisioned accordingly, though continued vigilance is warranted given that further shocks may still materialize. While a newly introduced windfall tax on bank profits[293] (the second in two years) is not likely to have immediate negative impacts on financial stability, it will potentially impact banks' ability to absorb losses if the situation deteriorates and affects their willingness to actively provide loans. Since December 2024, the Board of the NBU raised the key policy rate to 14.5 percent a year (from 13 percent) after a downward trend from 25 percent since mid-2023. The nonbank financial institution (NBFI) sector is also suffering significant losses (on top of pre-2022 vulnerabilities), but data remain very limited. Given its small size, the NBFI sector is not expected to have systemic impacts on the overall financial system. Since RDNA3, updated information shows that damage has increased slightly, while losses remain essentially unchanged and have decreased nominally only as a result of hryvnia depreciation.[294]

Damage and Loss Assessment

The total cost of damage to the sector is estimated to be US$21.1 million (Table 23). Damage was estimated using data on banks' fixed assets (in particular, bank premises and equipment), as well as NBU's bank survey on damage.[295] Khersonska, Donetska, Kharkivska, Luhanska, and Zaporizka oblasts account for the largest shares of damage. SOBs, which comprised 54 percent of net banking system assets as of

[291] This amounts to almost 15 percent of the net loan portfolio banks held at the end of February 2022. The difference between RDNA4 and RDNA3 is explained by hryvnia depreciation against the US dollar.

[292] Since February 2022, nine banks have been declared insolvent, including two subsidiaries of Russian SOBs and seven small private banks, together accounting for around 3.6 percent of banking sector assets. One systemic bank and two small banks were nationalized on grounds of sanctions, together accounting for 3.1 percent of banking sector assets.

[293] Ukraine's standard corporate income tax (CIT) rate is 18 percent. Starting from January 1, 2025, the basic CIT rate for the taxation of financial institutions (excluding insurance companies) is 25 percent. The CIT rate for banks' profits for 2023 and 2024 was raised to 50 percent.

[294] The exchange rate used in RDNA4 (US$1 = UAH 42.039) differs from the RDNA3 (US$1 = UAH 36.5686).

[295] Data from the bank survey conducted by NBU are as of August 2024.

November 2024, account for 46 percent of damage (down from 55 percent in the RDNA3). The total damage amount does not include damage caused to the NBU central office building in Kyiv in early 2025.

The losses in the sector are estimated to be US$5.2 billion (Table 23). Credit losses were estimated at 25 percent of the pre-2022 net loan portfolio, which is the midpoint of the upper and lower range estimates outlined in NBU's Financial Stability Report (FSR) for the second half of 2022.[296] The estimate is the same as for RDNA3 and 5 percent lower than RDNA2 based on the results of NBU's 2023 resilience assessment, which showed that most banks adequately assessed potential credit losses and provisioned accordingly. At the same time, additional provisions may be needed once the independent asset quality review (AQR) is conducted. About 40 percent of credit losses are attributed to SOBs, and 45 percent of losses are attributed to the Kyiv City region (due to the specifics of registering enterprises in Kyiv). A third of credit losses are caused by direct destruction of borrowers' assets,[297] while the remainder are attributed to the economic impacts of the invasion. The quantification of losses does not recognize the inherent risks posed to recent gains arising from reforms to the financial sector, which include emergency measures to address risks stemming from Russia's invasion of Ukraine as well as the SOB strategic framework; nor does it recognize the potential delays to further legislative reforms, which could occur given the need to address postwar problems first.

Human impact: Despite a series of cyberattacks and a period of deposit withdrawal in anticipation of the invasion, the majority of bank branches have remained operational: online banking services are fully available to all clients with internet connectivity; the noncash payment system is functioning normally; and liquidity has recovered for most banks. To ensure the continuity of the banking network, in late 2022 NBU joined with banks to introduce so-called Power Banking,[298] a network of about 2,400 bank branches designated as on duty across the country that can provide banking services even during prolonged blackouts. Currently, about 75 percent of all branches of the Power Banking network belong to systemically important banks, and the rest to branches of other banks. Access to credit has expanded as banks have eased lending standards and decreased interest rates. To mitigate critical third-party risk in banks, NBFIs, and payment service providers, the NBU plans to strengthen the third-party risk management framework in 2025.

Recovery and Reconstruction Needs, including Build Back Better

The total reconstruction and recovery needs are estimated at US$2.1 billion over 10 years (Table 24). A total of US$2.6 billion in war-related credit losses was already provisioned for in 2022–2024. These losses were covered by banks themselves from current income and have been discounted from the overall needs. Moreover, due to the sector's high profitability, banks also raised capital. The estimated percentage of overall war-related credit losses is 25 percent (the same as it was for RDNA3, and 5 percent lower compared to RDNA2)—the midpoint between NBU's baseline and adverse scenarios under NBU's 2023 resilience assessment. Actual recapitalization needs can be determined after NBU's regular

[296] NBU, "Financial Stability Report," June 2022, Link.
297 NBU estimates.
[298] NBU, "Power Banking" [in Ukrainian], Link.

resilience assessment in 2025, and the independent AQR may be another valuable source (if conditions allow for its conduct.

For the financial sector to recover and drive the overall economic recovery, a series of measures needs to be taken in different time frames. Financial sector policy reforms should continue to focus on (i) preserving financial stability and maintaining public confidence (in the short to medium term), (ii) strengthening readiness for the recovery and resolution (short term), (iii) safeguarding and strengthening institutional frameworks as well as capacity of the financial market regulators (short to medium term), (iv) enhancing the financial sector's contribution to addressing fiscal and private sector needs (short to medium term), and (v) aligning financial sector legislation with the EU *acquis* and implementing reforms according to the Ukraine Plan (short to medium term). To ensure financial stability during the invasion and in the recovery/reconstruction phase, there is a need for coordinated efforts by all financial market players—financial institutions, the NBU, the National Securities and Stock Market Commission, and the Deposit Guarantee Fund (DGF)—and for effective support of public authorities, in particular the Ministry of Finance. Private investment could cover a substantial portion of estimated needs, but its overall contribution is unknown.

Limitations and Recommendations for Future Assessments

This sectoral assessment is based on a wide range of inputs, including data from such sources as NBU and surveys of financial sector institutions. The assessment also uses expert opinions and secondary data where possible. As in RDNA1, RDNA2, and RDNA3, the estimates are based on currently available information. More accurate estimates will be available once the financial sector independent AQR is completed. Moreover, as indicated above, the quantification of losses does not recognize the inherent risks posed to the recent gains arising from reforms to the financial sector, such as temporarily applied relaxation of prudential rules (which have to a large extent been reversed) or changes to the SOB strategic framework; nor does it recognize the potential delays to further reforms as a result of the need to address postwar problems first. Due to data limitations, the nonbank financial sector could not be included in the assessment. Going forward, the assessment could benefit from further strengthening of the damage registry coordinated by the MDCT and streamlining of existing data sources to improve data quality and accessibility.

Table 23. Finance and banking: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	-	41.2	16.5
Chernihivska	0.3	22.5	9.3
Chernivetska	-	13.7	5.5
Dnipropetrovska	-	207.1	82.8
Donetska	5.4	175.2	78.0
Ivano-Frankivska	-	45.9	18.4
Kharkivska	3.4	855.3	345.1
Khersonska	5.7	184.6	78.8
Khmelnytska	-	43.5	17.4
Kirovohradska	-	28.1	11.2
Kyiv (City)	-	2,332.9	933.2
Kyivska	0.5	36.7	15.1

Luhanska	2.5	31.0	16.0
Lvivska	-	167.8	67.1
Mykolaivska	0.5	93.0	38.0
Odeska	-	207.7	83.1
Poltavska	-	53.7	21.5
Rivnenska	-	25.4	10.2
Sumska	0.3	38.2	15.5
Ternopilska	-	27.6	11.1
Vinnytska	-	44.8	17.9
Volynska	-	18.5	7.4
Zakarpatska	-	20.1	8.0
Zaporizka	2.5	419.0	171.2
Zhytomyrska	-	26.2	10.5
Nationwide (no specific region)	-	66.3	-
Total	**21.1**	**5,226.1**	**2,088.7**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2025; needs cover 10 years between 2025 and 2035.

Table 24. Finance and banking: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Infrastructure (total)	25.5
	Public sector (stated-owned banks)	12
	Private sector (domestic and foreign banks)	13.5
Service delivery restoration needs	Additional provisions for credit losses and investments to strengthen the resilience of banking operations	2,063.2
	Public sector (stated-owned banks)	762.56
	Private sector (domestic and foreign banks)	1,300.68
Total		**2,088.7**
Total needs met		**3,108.0**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024.

INFRASTRUCTURE SECTORS

Energy and Extractives

Context

Since February 2022, the energy sector has been subject to continuing attacks and related damage. Attacks on energy infrastructure from October 2022 onward have caused extensive damage across the country. These attacks, as well as cyberattacks on energy companies, have significantly damaged the integrated energy system, including power generation, transmission, and distribution infrastructure. The destruction of the Kakhovka hydroelectric power plant (HPP) dam caused substantial harm to the energy sector and the Khersonska region in particular.[299] In the course of 2024, Ukrainian energy infrastructure sustained additional new damage, especially between March to June, August, and November-December months, due to 13 massive attacks on the Ukrainian energy infrastructure. During the period covered by the RDNA4, new damage was recorded to power generation infrastructure (flexible capacity such as thermal power plants [TPPs], large hydro power plants, and combined heat and power plants), to the power transmission system operator (TSO) Ukrenergo, and to power distribution system operators.[300] As a result, overall installed generation capacity available for use dropped to 15 gigawatts (GW) as of December 31, 2024[301] —significantly lower than the peak demand for electricity, especially in winter (18–19 GW). Ukraine could thus face a power deficit in the heating season of up to 6 GW, depending on weather conditions and further impacts.[302]

Before February 2022, this sector played a key role in Ukraine's economic growth as well as its national security, and increasingly supported the country's goal to modernize the economy. The energy supply sector represented 7–8 percent of GDP;[303] gas transit fees from Russia represented about 0.3 percent of GDP and had been decreasing in recent years.[304] The entire population had access to electricity, and 94.9 percent had access to clean fuels for cooking. Central heating had high penetration (about 47 percent), particularly in the bigger cities. The gas distribution network covered 74 percent of the population,[305] and 89 percent had access to clean water, due to pumped water distribution systems.

Damage and Loss Assessment

[299] GoU and UN, "Post Disaster Needs Assessment: 2023 Kakhovka Dam Disaster, Ukraine," 2023, Link.

[300] Strikes affected (i) power generation facilities, particularly those critical for balancing the power system, such as thermal power plants, large hydroelectric plants, and combined heat and power plants; (ii) Ukrainian nuclear power plants' infrastructure, especially autotransformers; (iii) gas supply infrastructure, including underground gas storage facilities; (iv) energy assets crucial for cross-border operations with EU countries in the power and gas sectors; (v) regional energy infrastructure (subject to missile and drone attacks in western and central Ukraine and to shelling in front-line regions (including Sumska, Kharkivska, Donetska, Dnipropetrovska, Zaporizka, Khersonska, Mykolaivska, and Odeska).

[301] Following spring 2024, the avaialable installed capacities dropped significantly to 11-12 GW. Since then, Ukraine repaired and restored around 3-4GW of its installed power generation capacities before the 2024-2025 heating season.

[302] International Energy Agency, "Ukraine's Energy Security and the Coming Winter," September 19, 2024, 7, Link.

[303] National Institute for Strategic Studies under the Office of the President of Ukraine, "Determination of the Level of Energy Security of Ukraine" [in Ukrainian], 2023, 35, Link.

[304] Gas transit via the territory of Ukraine has undergone substantial changes since independence. The construction of pipelines (Blue Stream in 2003, Nord Stream 1 in 2011, and TurkStream in 2020), gas disputes between Ukraine and Russia, and the development of the liquefied natural gas market have served to reduce gas transit through Ukraine over the last few years. ExPro Consulting, "Special Material: 5-Year Contract for the Transit of Russian Gas: Results" [in Ukrainian], December 30, 2024, Link.

[305] State Statistics Service of Ukraine.

Damage, as of December 31, 2024, is estimated at US$20.51 billion.[306] This includes damage to the district heating sector, which is estimated to exceed US$2.5 billion.[307] Damage to the energy sector is double that recorded in RDNA3. The largest share of damage is in the power sector: US$14.8 billion (compared to US$6.8 billion in RDNA3). Within the power sector, the generation segment is the largest contributor to damage, at US$11.9 billion (compared to US$4.3 billion in RDNA3), followed by the transmission segment at US$2.23 billion (compared to US$2.15 billion in RDNA3). Damage to the power distribution sector is estimated at about US$0.62 billion (compared to US$0.43 billion in RDNA3) without including assets in territories currently not under government control. Estimates of damage to the gas sector are US$1.35 billion (US$1.3 billion in RDNA3). Damage to the oil sector, including oil refinery facilities, fuel depots, and fuel stations, is estimated at around US$1.7 billion (the same as in RDNA3) due to a lack of new information from the mines located in territories temporary not under government control. An indicative breakdown of damage and losses by regions is in Table 25.

Estimated revenue losses in the power, gas production, gas transit, coal mining, and fuel oil sectors exceed US$72.3 billion (compared to US$54 billion under RDNA3 and US$27 billion under RDNA2).[308] The revenue losses arise from attacks on energy infrastructure, displacement of people, economic contraction, and poverty increase, combined with the decrease in collection rates (mainly in regions close to the front line). [309] The losses (partly quantified so far) are from the following sectors: power (US$43.4 billion), gas (US$7.65 billion), fuel oil (US$9.94 billion), and coal (US$7.75 billion).

Human impact: The attacks on the energy system have caused civilian suffering and general economic attrition.[310] Immediate power outages have affected around 1.5 million people, disrupting heating, water supply and sanitation, public transportation, and telecommunications,[311] as well as health and education services. Beyond immediate/short-term impacts, there are also long-terms health impacts and risks.[312] For some households and businesses, private investments in distributed power generation (mainly from small diesel generators) have provided partial short-term relief.[313] Attacks on energy infrastructure have affected civilian life across the country; some events—such as the destruction of the Kakhovka Dam—impact certain regions in particular.[314] Older persons, those with disabilities, low-income households, and internally displaced persons, especially women, have been disproportionately affected.[315] Residents of

[306] Not all damage has been recorded and assessed; see the discussion of limitations below. For example, assets located in territories temporarily not under government control are estimated to be partially damaged (50 percent). It is likely that some of the assets are completely destroyed while others are almost intact. The ability to verify the damage is limited at this point.
[307] The RDNA3 energy sector assessment did not include district heating, which was covered under the municipal assessment. RDNA1 and RDNA2 included district heating under the energy assessment.
[308] The losses were estimated by comparing the level of production and revenues in 2021 and 2022 and taking into account the production decreases due to the invasion.
[309] UA Energy, "Ukrainians' Utility Debts Are Growing: What Should Heat Users Do?" [in Ukrainian], March 17, 2023, Link.
[310] J. Yaffa, "The Impact of Russian Missile Strikes on Ukraine's Power Grid," *The New Yorker*, February 20, 2023, Link.
[311] Disruptions in water supply and heating are particularly severe for urban areas reliant on centralized systems.
[312]Health risks include increased risks of hypothermia, frostbite, and exacerbation of chronic conditions due to lack of heating; mental health issues among civilians and energy infrastructure workers; public health issues as hospitals and clinics cope with power cuts that affect life-saving medical equipment and procedures. These are described in the health sector chapter. See also OHCHR, "Attacks on Ukraine's Energy Infrastructure: Harm to the Civilian Population," September 2024, Link.
[313] R. Olearchyk, "Ukraine Braced for Attacks on Its Power Grid as Winter Draws In," *Financial Times*, November 2, 2023, Link.
[314] A. Binley and P. Adams, "Ukraine Dam: Thousands Flee Floods after Dam Collapse Near Nova Kakhovka," June 7, 2023, Link.
[315] OHCHR, "Attacks on Ukraine's Energy Infrastructure: Harm to the Civilian Population," September 2024, Link.

high-rise buildings—especially individuals with low mobility, older adults, and families with small children—have suffered due to cuts in elevator service, and electricity cuts have also made preparing and storing food much more difficult.[316]

In 2024, at least 18 civilians have been reported killed and 84 injured in the immediate vicinity of strikes on energy infrastructure, including workers at energy facilities.[317] Since 2022 and until the end of 2024, 119 energy specialists have been killed and more than 300 injured by attacks on energy infrastructure.[318] DTEK Holdings (Ukraine's largest private energy holding company) reported the loss of 330 employees (on the job or within Ukraine's armed forces); more than 1,067 have been injured, 13 are in captivity, and 79 remain missing.[319]

Recovery and Reconstruction Needs, including Build Back Better

The sector's total needs as of December 2024 are estimated at US$67.78 billion (Table 26), an increase of US$20.1 billion over RDNA3.[320] This amount includes US$53.7 billion to rebuild the power generation sector, based on green transition principles and following the agreements with the EU. The regions with the largest estimated needs are Zaporizka, Kharkivska, Dnipropetrovska, Donetska, Odeska, and Sumska. Indicated needs are based on information available as of December 31, 2024; more detailed studies and quantification will be required, particularly for the regions that were most directly impacted. The private sector is expected to undertake the largest share of investments (in renewable energy generation, flexible capacity, and cogeneration).

The estimated private sector investments needed amount to at least US$41 billion. Following the RDNA2, the IFC estimated that private investment could cover around three-quarters of estimated needs in the energy and extractives sectors.[321] However, this share would drop to 5 percent without changes to the policy and regulatory framework. The IFC notes that the GoU could unlock additional private financing by opening more subsectors to potential private investment in suitable forms (e.g., electricity transmission, large hydropower, district heating system). Other reforms needed to promote private sector participation and spur competition include raising price caps, resolving the issue of debt settlement for auxiliary services providers at the balancing market and producers of renewable energy sources (RES), introducing competitive forward markets, improving pilot auctions for electricity from RES, and adjusting regulated tariffs to allow cost recovery in different energy segments. Decentralization of the power sector could be done with the participation of small consumers (such as households[322] and SMEs).

[316] Ibid.
[317] OHCHR, "Attacks on Ukraine's Energy Infrastructure: Harm to the Civilian Population," September 2024.
[318] "People Who Restore Light" [in Ukrainian], *Ukrinform*, December 22, 2024, Link.
[319] DTEK, "Message from DTEK's CEO Maxim Timchenko," December 23, 2024.
[320] Needs for district heating reported in RDNA3 (in the municipal sector assessment) amounted to US$4.7 billion.
[321] IFC, *Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine: Volume 2, Sector Assessments*, 2023, Link.
[322] For instance, by autumn 2024, the total installed capacity in households exceeded 2 GW, with an increase of approximately 500 MW in that year. Households already installed more than 1 GW. Alexander Kisilev, "The End of the 'Green Tariff': How to Continue Making Money on Solar Energy," *Ukrainska Pravda*, November 4, 2024, Link.

Several recovery efforts have succeeded in meeting needs, though consolidated information is not available in monetary terms.[323] In the power sector, through the 2024 repairing campaign, Ukrainian power generation companies have restored around 3–4 GW of the installed power generation capacity.[324] By December 1, 2024, the electricity import capacity had been increased to 2.1 GW (from 1.7 GW). Compared to the previous year, the TSO infrastructure is much better protected, and it suffered less critical damage during intense attacks in 2024 than earlier. This is thanks to Ukrenergo's extensive investments in security measures over the last two years. In the gas sector, state-owned holding company Naftogaz Group increased domestic gas production in 2024 by 7 percent over 2023, and it plans to reach production of 14.9 billion cubic meters (BCM).[325] This will provide 82–83 percent of all gas produced. The remaining 17 percent will come from the private sector, which remains stable in gas production after a drastic reduction in 2022. Overall domestic gas production in 2024 is estimated at about 19.2 BCM[326] (compared to the expected 2024 demand of about 20–20.5 BCM).[327] In addition, the Naftogaz Group has been accumulating liquidity in case natural gas (potentially up to 2–3 BCM) needs to be imported (directly by Naftogaz or through its subsidiary Ukrtransgaz[328]).

Under the Ukraine Plan as part of the Ukraine Facility (2024–2027), Ukraine is also committed to implementing seven priority reforms in the energy sector to contribute to further alignment with EU legislation.[329] These focus on enhancing energy security, transitioning to low carbon and RES, and promoting energy sustainability. The aim is to increase Ukraine's export potential in European markets and broaden opportunities for attracting investments. The seven reforms focus on the following key areas: (i) securing the approval of the National Energy and Climate Plan (NECP) as the central policy document; (ii) creating conditions that promote the growth of RES and attract investments; (iii) supporting the integration of the Ukrainian and EU electricity markets; (iv) promoting postwar liberalization of gas and electricity prices; (v) ensuring the independence of the regulator (National Energy and Utilities Regulatory Commission, NEURC); (vi) promoting energy-efficient and sustainable heat supply; and (vii) improving energy efficiency in the building sector. Ukraine has already made progress by fulfilling the first steps for the electricity market reform and adopting the National Energy and Climate Plan in 2024.

Concerning the heating sector and decentralization, extensive work to restore energy infrastructure is being done at a regional level, especially in frontline regions. Backup facilities, cogeneration facilities, and other equipment are being supplied to ensure that infrastructure can operate following significant damage (such as in Kharkivska, Sumska, and Odeska) and that critical infrastructure (heating, water, sanitation) can operate when electricity is unavailable. The power TSO in collaboration with the regulator (NEURC) has introduced summer special auctions for flexible generation capacity; it has also conducted

[323] Some information on donated equipment, etc., is available. Please see introduction to the RDNA, which includes consolidated information on humanitarian donations.
[324] International Energy Agency, "Empowering Ukraine through a Decentralised Energy System," December 17, 2024, Link.
[325] Nadiya Sobenko and Andriy Stasiuk, "Naftogaz Does Not Plan to Increase Gas Prices for the Population—Chernyshov" [in Ukrainian], Suspline, November 4, 2024, Link.
[326] ExPro Consulting, "Ukraine Increased Gas Production by 2.2% in 2024 to 19.12 Billion Cubic Meters"[in Ukrainian], January 2, 2025, Link.
[327] ExPro Consulting, "Naftogaz Extraction Plans for 2025" [in Ukrainian], November 22, 2024, Link.
[328] Mykhailo Svishchi, "How Can the Purchase of Imported UTG Help Ukraine in Winter?" [in Ukrainian], Energy Business, December 28, 2024, Link.
[329] For more details, please see Ukraine Facility, "Ukraine Plan 2024–2027," Link.

auctions for Frequency Containment Reserve (FCR) for 100 percent of the need and auctions for Automatic Frequency Restoration Reserve (a-FRR) for about 50 percent of the need.[330] In 2024, the GoU also simplified the procedures for preparing, constructing, and connecting new facilities, which should facilitate decentralized solutions implemented by the population.[331]

Ukraine's energy sector reforms are guided by its EU accession negotiation process. In 2025, building a renewable decentralized energy system is a main priority, also for reasons of Ukraine's energy security. Steps toward resolving the issue of debt settlement for RES producers will be key to attracting the necessary private investment. For the upcoming year, planned key reform steps for alignment with EU law as part of the Ukraine Plan include the adoption and implementation of the Electricity Integration Package and legislation to enhance the independence of the energy regulator, ensuring fair and transparent decision-making. NEURC should appoint a nominated electricity market operator to streamline market operations. To attract investments, a market-based legislative and regulatory framework for RES needs to be introduced, alongside the transposition of the Renewable Energy Directive (RED) II. Other critical steps include adopting district heating legislation, completing the transposition of the regulation on security of gas supply, and integrating energy efficiency criteria into new public procurement laws.[332] Additionally, amendments to the cogeneration law should establish support mechanisms for high-efficiency combined heat and power (CHP) systems.

Other priority projects aim to increase the energy sector's short- and medium-term resilience and capacity. These projects will complete the construction of new power generation capacity, create new decentralized generation capacity, more effectively protect energy infrastructure, and develop infrastructure for transmission and cross-border connections.

In the power sector, the ongoing attacks combined with existing capacity shortages significantly increase the risk of power and heating shortages during the 2024/2025 heating season. Investment in decentralized generation and backup facilities is urgently needed. However, various limitations (related to funding, preparation, and construction) impede quick development of the necessary decentralized energy capacity. Flexible power capacity has suffered substantial damage, and the need to construct new, particularly decentralized, flexible capacity is pressing. Putting new capacity from recent auctions into operation will take at least one year. The role of nuclear power plants (NPPs) has increased, and the infrastructure suffers frequent attacks. NPPs must leverage the experience of the TSO to protect their substations, which are primary targets. Renewable energy should play a prominent role in a more decentralized system. Dedicated de-risking instruments (e.g., minimum price guarantee instruments) could unlock significant private investments in the renewables sector. The Ukraine Investment Framework

[330] Ukrainian Energy, "Ukrenergo Plans to Buy Additional Services for Balancing the Power System" [in Ukrainian], October 21, 2024, Link.

[331] Ukrainian Energy, "The Government Promotes the Development of Distributed Generation" [in Ukrainian], October 8, 2024, Link.

[332] Ukraine is actively working to align its legislation with EU directives, particularly regarding the integration of energy efficiency criteria into new public procurement laws. Any modifications to procurement legislation, including those related to energy efficiency, must be harmonized with the relevant EU directives and approved by the European Commission's Directorate-General for Internal Market, Industry, Entrepreneurship, and SMEs. This process is to ensure compliance with EU standards and facilitate Ukraine's further integration into the EU internal market.

under the Ukraine Facility could play a prominent role in launching such a de-risking instrument, with donors providing coordination and funding.

In the gas supply sector, a colder-than-average winter could necessitate additional gas imports. Ukraine would require physical gas flows from Central and Eastern Europe, potentially at a higher cost. In the IMF October 2024 review, the GoU indicated a possible need to import 2–3 BCM to supplement a shortfall.[333] With Russian gas transit ending and attacks on Ukraine's gas system ongoing, Russia could again attack Ukrainian infrastructure important for gas storage facilities and cross-border connections with EU countries. Moldova, Slovakia, Hungary, Austria, and other countries may also suffer negative impacts, as noted in other reports. [334]

Overall, the recovery efforts are extensively supported by the donor community through in-kind support, grants, and concessional financing. In response to the widespread destruction of Ukraine's energy infrastructure, the UCPM[335] provides support based on two objectives: repairing the electricity grid using high voltage transmission equipment and ensuring energy self-sufficiency through the supply of power generators and other power production capacities, resulting in substantial assistance including over 8,800 power generators, almost 3,500 transformers, five autotransformers, thousands of electrical components, millions of efficient LED bulbs, and the EU Emergency Response Coordination Centre (ERCC) mobilizing a total of 3,360 generators from the rescEU stockpile. A crucial funding source for reconstruction efforts has been the Ukraine Energy Support Fund, established in collaboration with the European Commission and the Ministry of Energy of Ukraine. This fund accumulates financial contributions from international donors to support Ukraine's energy sector. As of December 19, 2024, the Fund had secured pledges totaling €1,066 million, with €875 million already transferred. The United States Agency for International Development (USAID) through its Energy Security Project (ESP) facilitated a large-scale procurement and installation campaign of cogeneration units across the country. By the end of 2024, USAID ESP had delivered 109 cogeneration units to ensure heat supply for over 1.6 million residents in apartment buildings and more than 1,600 social facilities.[336]

In terms of the emergency equipment, the following details are available on the G7+ donor community support provided as of the YE2024 and emergency needs/remaining gaps in donor support for 2025. Regarding the repair of existing power plants and transmission, €275.6 million of support has been provided, with additional needs amounting to €472.7 million (including €102 million for Ukraine Energy Support). For emergency backup and heating systems, over 17,700 units have been provided, with a gap of 2,400 units. Additionally, over 1,006 MW of power has been supplied, with a need for 251 MW more. There have been 156 mobile boiler house deliveries, with 284 still needed, and over 230 cogeneration systems provided (including support from USAID and the World Bank through the REPOWER facility), with

[333] IMF, "Ukraine: Fifth Review under the Extended Arrangement," October 18, 2024, Link.
[334] For Moldova, see Daniel F. Runde et al., "Moldova's Gas Futures," CSIS, September 9, 2024, Link. For Slovakia and other EU countries, see Ugnė Keliauskaitė and Georg Zachmann, "The End of Russian Gas Transit via Ukraine and Options for the EU," Brugel, October 17, 2024, Link. For Czechia and other EU countries, see "Is Gas Transit at Risk? Will the EU Maintain a Route through Ukraine and Azerbaijan's Role in It," *News Ukraine*, September 9, 2024, Link.
[335] UCPM support was channeled through the Emergency Response Coordination Centre (ERCC).
[336] United States Agency for International Development support was provided through the Energy Security Project (USAID ESP). See USAID, "Cogeneration Equipment from USAID Allows Utilities in the Rivne Region to Supply Uninterrupted Heat to Communities," December 26, 2024, Link.

a requirement for 420 more. In terms of procurement and leasing of new power, donor support has been provided for over 100 MW, but an additional 491 MW is needed. In addition, the donors actively support the development of passive and active energy infrastructure protection. Operations security restricts the sharing of details of the current needs and project statuses.

In the district heating subsector, recovery efforts have received significant support from UN agencies. The UN's WASH cluster leads the coordination of humanitarian aid to district heating companies, ensuring the supply of hot water and heating in the most vulnerable areas, including those along the frontlines. Partners of the WASH cluster have provided emergency support, including mobile boiler houses, generators, co-generation units, pipes, pumps, and other essential equipment to help recover damaged infrastructure and ensure backup power supply. In 2024, these efforts benefited 1.5 million people, with funding from various donors, including the Ukraine Humanitarian Fund and the UN country-based pool fund.

Limitations and Recommendations for Future Assessments

The assessments of needs have been updated to reflect the 2024 Industrial Producer Price Indices, which show an approximate 20 percent increase compared to the previous year.[337] Additionally, adjustments consider the depreciation of the UAH, and the exchange rate of UAH/US$42.039, representing a roughly 10 percent decline.

The main shortcoming is linked to the limited information of some subsectors and regions:

- Power sector damage estimates in areas not controlled by the GoU are inaccurate. In areas partially controlled by the GOU, the accuracy of estimates varies. Full estimation of power sector damage in areas not fully controlled by Ukraine should be done once possible.
- The power TSO data are aggregated at the country level due to the extra sensitivity of the information.
- The gas sector does not include damage in the gas production sector. If the government provides data on this category, damage could be quantified.
- The coal mining sector was not quantified in detail due to the lack of data.

The assessment uses a range of assumptions in addition to the general RDNA assumptions:

- Damage includes territories fully or partially controlled by the GoU as well as territories temporarily not under GoU control. Damage for distribution system operators is provided only for territories controlled by the GoU. Damage in territories temporarily not under GoU control is estimated if possible and based on information from the GoU and other sources on actual damage to facilities. Assets in territories temporarily not under government control are not considered as definitely lost unless there is certainty that they have been completely destroyed.
- Damage quantification in the power sector is estimated as replacement cost (with similar equipment quality).
- Power generation damage is based on conservative assumptions and fragmented information—damage to TPPs may be larger. Some assets have been damaged and repaired multiple times.

[337] Ukrstat.gov.ua, "Industrial Producer Price Indices (to Previous Month): Archives 2024," Link.

- The transmission damage is calculated based on estimates from Ukrenergo that combine preliminary and actual estimates. The former applies until the end of hostilities and is based on available information from technical personnel (witnesses) on the asset's condition, degree of damage, and the possibility of recovery. The latter is based on actual inspection, technical inspection, and full inventory in areas controlled by the GoU where inspections are feasible. Ukrenergo has operational data on damage to the network and inspects and repairs damaged assets.
- Given the limitations on data sharing, direct detailed information on damage to most of the power distribution networks could not be obtained. In the future, the actual extent of damage will have to be assessed, and a power sector model will be needed to refine the needs estimates.
- Damage in the gas transmission sector is estimated using the book value provided by the gas TSO and adjustments to derive market-based replacement costs. The values are preliminary and will need to be specified when the security situation allows.
- The quantification of the fuel oil sector is based on estimations provided by the KSE, complemented by additional modeling by the World Bank. With additional data, these estimates should be refined and verified later.
- Where possible, damage to assets in areas temporarily not under government control has been estimated assuming partial damage instead of 100 percent damage. This should be better quantified once possible.
- In many cases, the damage values are provided only as book values of the damaged assets or percentages of book values of the damaged assets, and real damage values are higher.
- Many damages have not been quantified yet at all.
- Some calculations for previous RDNAs were specified following the collection of additional details, in particular, as to the revenue losses.
- In the coal mining sector, revenue loss estimations are kept the same as for the previous year due to a lack of information. Along with that, actual losses for this subsector are expected to be higher due to large damage to TPPs and a significant reduction in coal demand from the side of TPPs.
- Forward-looking losses, considering the end of the Russian gas transit at the end of 2024, are taken at the level of US$1.2 billion per year in line with the level of the last years of Russian gas transit.[338]
- Losses for the fuel oil sector are estimated the same as in the previous year, considering the overall contraction of the economy and demand decrease.

Related to the extractors sub-sectors, there is limited information available. Data limitations are exacerbated by the fact that many affected facilities are located in territories temporarily outside of government's control, making data collection particularly challenging. As a result, it is currently not

[338] ExPro Consulting, "Special Material: 5-Year Contract for the Transit of Russian Gas: Results" [in Ukrainian], December 30, 2024, Link.

feasible to produce a full assessment. A full assessment will be needed to accurately assess the damage and needs of the extractives sub-sector.

Table 25. Energy and extractives: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	0.0	-	0.0
Chernihivska	30.3	-	63.3
Chernivetska	0.0	-	-
Dnipropetrovska	150.2	-	148.2
Donetska	811.8	-	363.2
Ivano-Frankivska	0.1	-	0.1
Kharkivska	221.1	-	440.0
Khersonska	303.0	-	53.3
Khmelnytska	5.0	-	0.1
Kirovohradska	12.2	-	-
Kyiv (City)	34.5	-	85.0
Kyivska	111.1	-	163.4
Luhanska	322.0	-	123.7
Lvivska	48.9	-	50.3
Mykolaivska	108.3	-	191.2
Odeska	22.7	-	24.9
Poltavska	32.5	-	57.3
Rivnenska	13.2	-	-
Sumska	77.4	-	142.3
Ternopilska	-	-	-
Vinnytska	17.5	-	26.6
Volynska	6.5	-	0.6
Zakarpatska	179.5	-	351.6
Zaporizka	1,132.9	-	835.2
Zhytomyrska	14.6	-	4.5
Nationwide (no specific region)	16,862.3	72,287.7	64,657.1
Total	**20,517.6**	**72,287.7**	**67,782.0**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024. Loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026. Needs cover 10 years between 2025 and 2035. Needs met are not deducted, as no robust consolidated data in monetary terms are available.

Table 26. Energy and extractives: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Power sector reconstruction, including Transmission System Operator, Distribution System Operators, power generation facilities	53,760.7
	Heating Sector	4,301.5
	Gas transportation system reconstruction, including gas transmission system operator and distribution system operators	3,023.1
	Fuel Oil sector reconstruction, including oil refinery facilities and distribution networks	3,705.2
	Coal mining sector (urgent closure works on flooded mines, occupied now)	349.3
Recovery needs	Power sector liquidity needs	-
	Heating Sector Liquidity Needs	226.8
	Gas purchasing and gas system liquidity	1,400.0

	Debris removal, demolition and similar works	1,015.4
Total needs		**67,782.0**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035 as of December 31, 2024. Needs met are not deducted, as no robust consolidated data in monetary terms are available.

Transport

Context

Since February 2022, Ukraine's transport sector has faced immense challenges while demonstrating resilience. In the early months, transport infrastructure suffered extensive damage from major strikes and ground operations. The loss of access to maritime ports and the closure of airspace further disrupted freight and passenger logistics. Following the return of certain territories to GoU control in 2022, basic road and rail connectivity was restored through rapid repair efforts. Recovery efforts have prioritized mitigating disruptions to import and export routes. The EU Solidarity Lanes and, since September 2023, the Ukrainian maritime export corridor have been the most successful actions in reviving key export routes. Efforts have also been made to develop the Danube ports cluster and improve border infrastructure with EU countries and Moldova.

Since RDNA3, the context for transport sector damage in Ukraine has remained relatively unchanged. Most of the new damage is concentrated along the front lines in the east and south of the country. However, rail and road networks across the country remain under significant strain. Frontline areas face the challenge of accommodating heavy weaponry and supply vehicles, while western border regions are experiencing increased pressure from higher volumes of land freight flowing through them. Additionally, road infrastructure continues to deteriorate due to limited maintenance, as state funding has been primarily directed toward military needs.

While the pace of repair work has slightly slowed compared to that reported in RDNA3, significant efforts have been directed toward preparing for future recovery. At strategic level, the National Transport Strategy of Ukraine until 2030[339] has been updated, and a Strategy for the Development and Construction of Border Infrastructure with the EU and Moldova until 2030[340] has been adopted. Moreover, in pursuit of a strong, inclusive, and sustainable economic recovery, Ukraine has continued to reform and modernize the transport sector; for example, in October 2024 a bill of law to reform the railways sector was submitted to the Parliament. However, while these efforts signal progress, the pace of reform in transport state-owned enterprises (SOE) management remains a concern due to slow implementation.

Ukraine's transport sector has proven highly adaptable in responding to the changing trade dynamics and logistical demands caused by the invasion. Disrupted supply chains, rising transport costs, and bottlenecks in road and rail network have significantly impacted profitability. To mitigate these disruptions and ensure efficient, resilient logistics, the GoU has focused on three areas:

1. **Ukrainian maritime export corridor, along with the development of the Odesa and Danube cluster ports.** The Ukrainian export corridor (established in 2023 following the Black Sea Grain Initiative shutdown) and the Danube ports cluster revitalized trade routes, handling 97.2 million tons of cargo in 2024—a 57 percent increase over 2023. However, the volume still falls short of pre February 2022 full-scale sea operation levels. The primary focus has been on security measures to ensure the

[339] MDCT, "National Transport Strategy of Ukraine until 2030," 2024, Link.
[340] MDCT, *"Strategy for the Development and Construction of Border Infrastructure with the EU and Moldova until 2030", 2024,* Link

corridor's safe operation. To strengthen the Danube cluster ports operations, new equipment is being purchased with the support of international partners.

2. **Development of border crossing point infrastructure.** The shift to international land transportation has underscored the gap between border infrastructure in Ukraine and in EU member states. A range of activities to facilitate border crossings between Ukraine and the EU are being implemented under the EU's Solidarity Lanes and USAID/IOM Project. With support from international partners, measures are being taken to rapidly upgrade 18 border crossing points.

3. **Rail infrastructure development.** Increasing the capacity of transshipment facilities and the size of the Ukrainian Railways (Ukrzaliznytsia) fleet for cargo and passengers. Ukrzaliznytsia is exploring, and in some cases already undertaking, construction of 1,435 mm (standard gauge) railway sections to increase the number of overlapping sections of different EU and Ukrainian standards.

Damage and Loss Assessment

The total cost of damage to the sector is estimated to be US$36.7 billion (Table 27), compared with US$33.6 billion in RDNA3. Overall, no substantial shift in damage to transport infrastructure has been observed compared to RDNA3 due to the relatively stable front line. However, the intensification of damage to local-level infrastructure assets along the front line is being observed. In 2024, most of the additional damage in the sector was to Ukraine's railway and port infrastructure; approximately 190 attacks on railway facilities and around 20 on ports were reported throughout the year. Attacks on railway infrastructure primarily target power systems, such as traction substations. However, tracks and other components such as logistics centers are also affected. Approximately 30 percent of railway infrastructure remains in a "damage-repair" cycle. In addition to damage to railway infrastructure, there has also been damage to port infrastructure and to approximately 30 vessels. The largest concentrations of damage are in (i) local oblast, village, and communal roads (26 percent); (ii) railway infrastructure, rolling stock, equipment, and other assets (26 percent); and (iii) motorways, highways, and other national roads (21 percent). Four oblasts—Donetska, Kharkivska, Zaporizka, and Khersonska—together account for over 60 percent of damage. All reported damage, except damage to private vehicles, relates to public sector assets.

The losses in the sector are estimated to be US$46.7 billion (Table 27), compared with US$40.7 billion in RDNA3. As in RDNA3**,** the largest concentrations of losses are attributable to disrupted Black Sea port access (61 percent), despite the operation of Ukraine's maritime corridor (since September 2023) and the closure of Ukraine's aviation industry with loss of overflight revenues (27 percent combined). The overall 13 percent increase in transport losses since RDNA3 is mainly driven by further loss growth across all transport subsectors except railways, due to extension of the assessed timeline by one year and applied changes in the exchange rate. Rail is the only subsector for which losses decreased in comparison to the estimates of the RDNA3, as the 2024 financial performance of Ukrzaliznytsia exceeded projections. Note too that RDNA4 updates the methodology for calculating public transport losses by assessing the difference in factual operating income of sector entities and its pre-February 2022 expectations (versus the approach under RDNA3, which assessed public transport users' losses due to damage to the fleet).

The share of private sector losses is estimated to be about 85 percent of the total transport sector losses, largely driven by the disrupted access to Black Sea ports.

This assessment considers the positive impact of the Black Sea Grain Initiative (2022–2023) and the Ukrainian maritime export corridor. Since RDNA3, the estimated seaport losses have increased by only 8 percent, totaling US$29 billion; it appears that almost US$15 billion of expected losses have been mitigated over the assessed period as a result of these initiatives, which prevented full blockage of Ukraine's maritime corridors. The increase in port sector losses has been slowing down mainly because in 2024, the sea corridor significantly outperformed the RDNA3 projections.

Human impact: The human impact of disrupted transport services remains significant. Qualitatively, this impact includes reduced access and travel time lost by people; however, emergency repairs to road and rail networks have partially mitigated adverse impact. With airspace still closed, travelers—primarily women refugees accompanied by children—are forced to take longer journeys by land and continue to experience delays at western road and rail border crossing points. For transport sector personnel, transport operations raise significant safety concerns. In 2024, railway, port, and road sector personnel continued to suffer casualties. The sector is also grappling with a growing workforce shortage, primarily due to the conscription of workers into military service. The shortage of specialists exacerbates operational challenges and contributes to a loss of contractor capacity. In road construction, several factors – such as staff redundancy due to a significant decrease in volume of work, loss of production facilities and special equipment, etc. - are causing contractors to shift to other sectors, such as water supply infrastructure. There is an increasing need to involve women to fill the gap created by conscription of men, and a successful pilot program to train women as public transport and truck drivers is already in place.

Recovery and Reconstruction Needs, including Build Back Better

The total reconstruction and recovery needs, considering build back better principles, are estimated at US$77.5 billion over 10 years (Table 28). Building back better will be driven by decarbonization, transport efficiency, and multimodality. The largest concentration of reconstruction needs remains the same as in RDNA3. Needs include (i) motorways, highways, and other national roads (29 percent); (ii) railways infrastructure, rolling stock, equipment, and other assets (26 percent); and (iii) local oblast, village, and communal roads (18 percent). Donetska, Kharkivska, Khersonska, and Zaporizka oblasts together account for about 60 percent of recovery and reconstruction needs.

The Build-Back-Better perspective entails a paradigm shift in the way needs will be addressed. On the infrastructure side, affected transportation networks will have to be redesigned not only factoring climate change requirements, EU and, as relevant, Trans-European Networks for Transport (TEN-T) standards, but also changing transportation needs and patterns, as the geography of demography and industrial production also evolves. Infrastructure networks and associated services will have to be redesigned in a complementing and intermodal manner, considering the increasing role that road-based transport is poised to play, as observed elsewhere in the EU. In parallel, transport will have to undertake a fast-paced modernization of its institutional structure and industry; this is to be able to attract the required private

capital, as briefly described blow, but also to step-up service quality and cost-effectiveness. The SOEs reform and the innovation agenda will be key to spur change

The IFC's *Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine* report estimates that, with adequate reforms private investment could cover around 7 percent (US$5.4 billion) of the large, estimated needs in the transport sector. However, this share would drop to virtually nothing without changes to the policy and regulatory framework to enhance private sector participation. The key reforms to attract private financing notably include the introduction of public-private partnerships (PPPs) and concessions.[341] However, heightened risks are likely to make businesses cautious about long-term commitments in the early stages of reconstruction. In the short to medium term, road reconstruction will need to follow a more government-focused delivery model. Private sector participation is anticipated in the port and aviation sectors and is likely to extend beyond merely addressing damage. Additionally, private sector involvement is expected to continue in the logistics sector and, with appropriate reforms, could also play a growing role in the railway sector.

The pace of restoration slowed slightly in 2024, when most emergency repairs to restore basic connectivity were completed in areas returned to government control. Between 2022 and 2024, over 2,000 km of emergency repairs were carried out on motorways, highways, and other national roads; 115 road bridges were restored using temporary structures, including 29 modular bridges donated by international partners. Expenditures on the road sector in 2024 decreased by 57 percent compared to 2023. While the road sector experienced only a modest increase in damage in 2024 and required fewer emergency repairs, the railway sector continues to face a pressing need for emergency repairs due to the sustained intensity of the attacks. When planning repairs, Ukrzaliznytsia prioritizes connectivity and rebuilds tracks and bridges first. Traction rolling stock is the second priority due to its scarcity, while cars and wagons are third, as they are more prone to being damaged beyond repair. All repairs are funded by Ukrzaliznytsia's own resources. Railway safety remains a key focus, and Ukrzaliznytsia is working to maintain rail infrastructure without compromising technical standards while minimizing overdue repairs.

As of January 2025, the following fully or partially restored assets were reported: (i) 51 road bridges were repaired or newly constructed (a 76 percent increase since RDNA3); (ii) 60 artificial railway structures, including bridges were repaired or newly constructed (a 30 percent increase since RDNA3); (iii) about 328 km of railway tracks were rebuilt (a 48 percent increase since RDNA3); (vi) 57 locomotives and 154 railway cars were repaired. Ukrainian cities continue to seek options for replenishing urban transport rolling stock fleets. Replenishment is usually implemented either by partnerships with EU cities that give their used vehicles away, or by partnerships with international financial institutions and foreign governments to procure new vehicles. Kharkiv and Konotop are examples of cities that have partnered with cities abroad to acquire dozens of buses and trams.

Readiness to implementing projects is becoming an increasingly urgent issue and has the potential to constrain Ukraine's ability to absorb international assistance as reconstruction efforts intensify. While emergency repairs and the restoration of basic connectivity were the primary focus from 2022 to 2024, there is now a pressing need to mobilize project preparation for reconstruction and to build effective

[341] IFC, *Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine,* 2023, Link.

delivery teams. In the coming years, the execution capacity of implementing agencies must be significantly enhanced to address the enormous reconstruction and rehabilitation needs—an effort that will require profound sector reforms. These reforms are part of the broader regulatory and institutional changes that Ukraine is working on, as outlined in the Ukraine Reform Matrix[342]. Key regulatory reforms needed for the transport sector include port governance improvements, railway restructuring, the introduction of a PPP law, and the concessioning of highways.

Limitations and Recommendations for Future Assessments

RDNA4 considers roads, railways, bridges, aviation assets, ports, inland waterways, and urban public transport as part of the transport sector assessment. Specific limitations in the approach include the following:

- **Data sets and completeness.** RDNA4 calculates damage to road, rail, aviation, and urban transport assets using data provided by Ukraine's Ministry for Development of Communities and Territories; Ukrainian Railways; the State Agency for Restoration and Development of Infrastructure of Ukraine; oblast administrations; and municipal authorities. The accuracy of these data varies according to the security situation—that is, according to whether government representatives can access sites and validate (at least approximately) locations and actual levels of damage. Precise data on damaged assets in areas not currently under GoU control remain unavailable. Hence the resulting analysis of damage and needs is inherently uncertain.

- **Damage registry data.** The data included in the damage registry have the potential to replace the data collection process used in the RDNA. However, some transport subsectors, particularly local-level transport assets, are currently not included in the registry. Another limitation is that movable assets, such as rolling stock, are as of now not included to the damage registry.

- **Assumptions regarding extent of damage.** The assessment of damage does not include detailed engineering work or testing. Definitive assessment of damage levels is needed to determine appropriate mitigation strategies; for example, some assets assumed to be fully damaged might turn out not to require full replacement/rehabilitation. Remaining security threats and budgetary constraints have prevented detailed engineering assessments in most instances.

- **Cost estimates.** Estimates for reconstruction needs use unit costs or approximations for specific assets rather than detailed engineering assessments; actual costs will vary by the extent of damage, location within Ukraine, and market factors that may affect pricing of works at the time of reconstruction. Unit costs also reflect assumptions regarding the nature of works required for reconstruction, and actual technical solutions may differ from those assumed. The detailed site-by-site engineering analysis that would substantially reduce uncertainty may not take place in the near future, given constraints on budgets and capacity.

- **Continuation of airspace closure and limited access to the Black Sea ports**. Calculation of losses in RDNA4 reflects the partial restoration of transportation through Black Sea corridors under the Black Sea Grain Initiative and Ukrainian corridor. However, the future of the Ukrainian maritime export

[342] Cabinet of Ministers of Ukraine, *"Ukraine Reform Matrix", 2025*, Link

corridor remains uncertain. RDNA4 assumes that future monthly volumes for Black Sea ports will remain the same as in 2024 up to July 2026. RDNA4 also continues to assume that Ukraine's airspace will remain fully closed during this time. These assumptions are inherently linked to Ukraine's military gains or the effectiveness of international diplomacy efforts, both of which are outside the scope of RDNA4 analysis. Projected losses incurred or avoided are accordingly subject to high levels of uncertainty.

The foremost recommendations for future assessment are as follows: (i) as more territories are returned to GoU control and as security conditions allow, intensify field-level investigations and engineering work needed to identify and classify damage; and (ii) depending on how events unfold, consider a broader range of factors than just damage.

Table 27. Transport: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	53.3	1,129.3	101.3
Chernihivska	1,981.3	1,370.9	5,515.2
Chernivetska	4.6	429.1	10.3
Dnipropetrovska	742.4	4,228.4	1,818.9
Donetska	7,744.9	2,687.4	14,132.4
Ivano-Frankivska	5.0	944.1	10.0
Kharkivska	5,645.6	3,173.5	12,490.3
Khersonska	4,623.3	1,146.2	9,224.0
Khmelnytska	166.4	901.2	365.3
Kirovohradska	85.2	772.5	173.3
Kyiv (City)	-	-	-
Kyivska	2,079.9	13,000.6	5,100.5
Luhanska	3,419.5	723.7	5,622.0
Lvivska	112.7	2,317.5	230.3
Mykolaivska	1,672.7	1,218.0	4,170.5
Odeska	528.4	2,181.1	1,229.4
Poltavska	69.6	2,017.1	154.0
Rivnenska	5.0	729.5	8.0
Sumska	1,761.0	1,107.0	4,351.1
Ternopilska	0.3	600.8	0.5
Vinnytska	250.4	1,416.2	905.4
Volynska	3.4	819.9	7.4
Zakarpatska	2.6	643.7	3.4
Zaporizka	5,145.2	2,168.8	10,112.4
Zhytomyrska	645.7	1,018.8	1,788.8
Nationwide (no specific region)	-	-	-
Total	**36,748.5**	**46,745.2**	**77,524.6**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026. Needs cover 10 years between 2025 and 2035.

Table 28. Transport: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Road bridges (national roads)	7,572.0
	Road bridges (local roads)	918.1

	Motorways, highways, and other national roads	22,147.5
	Oblast and village roads	6,160.9
	Communal roads	7,503.0
	Airports	1,691.3
	Railways track, bridges, stations, and electrical	15,294.6
	Railway rolling stock	3,719.4
	Railway equipment and other assets	1,244.5
	Private vehicles	4,361.6
	Port and inland waterway infrastructure	1,411.4
	Urban public transport (rolling stock, infrastructure, depots, maintenance vehicles)	5,296.2
	Demolition and debris removal	204.1
Total		**77,524.6**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024.

Telecommunications, Digital, and Media[343]

Context

The telecommunications, digital, and media sector continues to be severely impacted. In the territories temporarily not under government control, telecom infrastructure was targeted to cut off access to news and impede information sharing with the Armed Forces of Ukraine.[344] Several recovery initiatives are ongoing. In October 2024, the European Bank for Reconstruction and Development (EBRD) and the International Finance Corporation (IFC) committed US$435 million to support the merger of Lifecell and Datagroup-Volia, creating the country's second largest telecom operator and marking the largest foreign direct investment since February 2022.[345] Given the role of the private sector in recovery efforts, VEON, global digital operator, committed US$600 million to enhance connectivity and deliver digital services essential for reconstruction. This pledge was submitted to Partner2Connect (P2C), the global multi-stakeholder initiative of the International Telecommunication Union.[346] Operators like Kyivstar have maintained approximately 93 percent network operability, ensuring critical communication services for millions of users.[347] International collaborations have also been pivotal; SpaceX's Starlink has provided satellite internet services to maintain connectivity in fighting zones and supporting communications. The EU has provided also various equipment.

Free, professional, diverse, viable and independent media are critical in recovery efforts.[348] Media organizations provide vital information as a public good, often as nonprofit or private entrepreneurs. Ukrainian media faced challenges including a collapsed advertising market, disrupted sales, destroyed communication networks, power outages, and reduced audience solvency. Editorial offices in areas with active fighting had to cease operations or relocate. Some media newsrooms were destroyed or captured. Despite this, the advertising market began to recover in late 2022, and media in the regions brought back under Government control resumed work. Ukrainian local and independent media rely on foreign grants for subsistence and risk collapsing without this support. State and international donor efforts focus on restoring media infrastructure and capacity in areas brought back under GoU control, frontline, and border regions. Local media receive most of this assistance.

The overall impact on this sector as of December 31, 2024, is estimated at over US$2.24 billion in damage, US$2.38 billion in loss, and US$5.86 billion in needs. The damage estimates in RDNA4 are 7 percent higher than those in RDNA3, and losses are 21 percent higher due to the ongoing destruction of infrastructure, which leads to increased operating expenses related to repairs. Needs estimates increased by 11 percent relative to RDNA3, reflecting increased losses as well as inflation and market conditions. The inclusion of the impacts on the media sector increased the damage, losses, and needs by approximately 1 percent. The recovery efforts by mobile and fixed internet service providers and postal

[343] The adjusted title reflects additional information provided in the RDNA4 on the media sector, compared to previous RDNAs.
[344] Paul Lipscombe, "Rebuilding Ukraine's Telecoms Infrastructure Amid War. Plans to Modernize the Country's Networks Have Been Delayed, but 5G Could Be on Its Way," Data Center Dynamics, January 9, 2024, Link.
[345] Olena Harmash, "EBRD and IFC to Provide $435 mln for Ukraine's Newly Merged Telecoms Firm," Reuters, October 10, 2024, Link.
[346] "Partner2Connect: Mobile Industry Answers Call for Connectivity," *ITU News*, February 28, 2024, Link.
[347] Vilija Simkiene, "Investing $600M in Ukraine's Telecommunication: Infrastructure, 4G, and Beyond," VoIP, June 21, 2023, Link.
[348] A comprehensive report analyzing recovery needs of the media in Ukraine by UNESCO and Lviv Media Forum is forthcoming in May 2025.

service providers have been ongoing and have resulted in continued service provision to the population. For example, mobile and fixed operators, which are in the private sector, have already invested in repairs of destroyed assets worth at least US$115.6 million.

Damage and Loss Assessment

The total cost of damage to the sector is estimated to be US$2.24 billion (Table 29). Of this amount, US$2.21 billion was sustained by the private sector.[349] This figure includes damage of US$968.5 million among fixed broadband operators (related to damaged fixed internet lines), US$942.5 million damage among mobile operators (damaged mobile towers), US$260.4 million among postal providers (damaged post offices), US$51.6 million damage to the broadcasting sector, and US$12.4 million damage to media organizations. Fixed broadband operators have incurred the largest share of damage (43.3 percent), followed by mobile operators (42.2 percent), postal service providers (11.6 percent), broadcasters (2.3 percent) and media (0.6 percent). Concerning the geographic distribution of damage, the following regions have sustained the largest shares of damage: Donetska oblast (17.5 percent of damage), Kharkivska oblast (15.4 percent), Zaporizka oblast (12.9 percent), Khersonska oblast (12.5 percent), and Kyivska oblast (10.6 percent). For the media sector, the largest damage was recorded in Kyivska oblast (including Kyiv City) amounting to US$5.5 million; followed by Kharkivska oblast (US$2 million), and Donetska oblast (US$1.7 million). Public assets account for 100 percent of the assets damaged in the broadcasting sector and 5 percent of those damaged in the postal sector; the remaining damage has been incurred by private companies.

The losses in the sector are estimated to be US$2.38 billion. Of this amount, US$1.61 billion was incurred by private providers. This figure includes revenue losses due to disruptions of postal services and mobile and fixed internet services, increased operating costs due to repairs, and additional costs of the backup electricity generators needed for uninterrupted internet service provision. Postal service providers have experienced the most significant losses in the sector at US$1.36 billion (57.2 percent of losses), followed by mobile operators at US$507.5 million (21.3 percent), fixed operators at US$466.6 million (19.6 percent). Losses to broadcasters amount to US$16.5 million (0.7 percent) and losses to media US$27.7 million (1.2 percent).[350] Concerning the geographic distribution of losses, 32.6 percent of losses have been incurred in Kyivska oblast, 13.6 percent in Donetska oblast, 14.0 percent in Kharkivska oblast, and 5.4 percent in Zaporizka oblast; these figures highlight the impact of lost revenue and greater operating costs in these regions. Overall, US$1.61 billion in losses have accrued to private providers.

Human impact: By affecting communication technology and media, there has been a significant human impact. Approximately 12.2 percent of households have lost access to mobile services,[351] and this disruption of connectivity hampers personal communications, critical services, and economic activities. Moreover, it disproportionately affects vulnerable populations—such as older persons, people with

[349] Damage is the estimated monetary value of destroyed or damaged physical assets, valued at prewar prices. Losses are a change in economic flows resulting from the invasion (e.g., decline in revenues of internet operators, increase in operational costs, etc.).

[350] As the RDNA4 exchange rate was applied to losses initially recorded in UAH, the losses are more significant than the absolute numbers show.

[351] Paul Lipscombe, "Rebuilding Ukraine's Telecoms Infrastructure amid War. Plans to Modernize the Country's Networks Have Been Delayed, but 5G Could Be on Its Way," Data Center Dynamics, January 9, 2024, Link.

disabilities, and women—who remain in areas with damaged infrastructure. The lack of internet access exacerbates existing inequalities by impeding people's ability to receive government services, pursue online education, and engage in remote work opportunities. Educational disruptions for students have been particularly pronounced in fighting zones, where online learning becomes unfeasible due to connectivity issues. The media sector has also faced significant challenges. Eighty percent of surveyed media outlets reported staff issues due to employees moving, enlisting, or a general reduction in workforce. According to UNESCO, at least 18 journalists and media workers have been killed on Ukrainian territory since February 2022, with many more attacked and injured.[352] Moreover, with regard to the significant damage to the broadcasting stations, citizens are not receiving the full broadcasting signal liming their timely access to the information.[353]

Recovery and Reconstruction Needs, including Build Back Better

The total reconstruction and recovery needs are estimated at US$5.86 billion over 10 years (Table 30). Of this amount, 51 percent pertains to reconstruction needs (covering the restoration of damaged assets and taking into account the build back better principle to reduce risks and vulnerabilities to future disasters), and 49 percent pertains to recovery needs (covering losses incurred due to service interruptions, increased costs, etc.). This split reflects the specifics of the sector, which relies heavily on infrastructure but also has significant costs associated with service disruptions (reduced revenue and increased costs of mobile operators; opportunity costs of lost economic activity). The associated interventions would therefore require both hard investments in infrastructure (e.g., for fixed and mobile internet providers) and capacity building in digitalization, cybersecurity, and other areas. Most total needs are concentrated in Kyivska oblast (23.2 percent of total needs), Kharkivska oblast (15.9 percent), and Donetska oblast (16.6 percent). Needs for media are estimated at US$70.1 million, including US$17.4 in reconstruction and US$52.7 million service delivery, including psychological support, education, etc.

The majority of needs (96 percent) accrue to the private sector, especially in the telecommunications subsector. An exception is Ukrposhta, one of the two postal providers and a publicly owned company. Some of these needs have been met by private operators. For example, an estimated US$115.6 million in needs was covered by mobile and fixed operators to restore internet lines and towers. This figure was deducted from total needs. Examples of needs met include repairs of fixed internet lines (in Chernihivska, Dnipropetrovska, Kyivska, and Odeska oblasts) and repairs of mobile towers (in Khersonska, Odeska, and Kyivska oblasts).[354] Private providers have undertaken these recovery efforts on an ongoing basis. However, continued strikes on infrastructure mean many of these assets will likely be damaged again. The Union Civil Protection Mechanism (UCPM) "Laptops for Ukraine" initiative channels donations from private individuals and companies, in cooperation with Slovak civil protection authorities, the Directorate-General for Communications Networks, Content and Technology (CNECT), and Digital Europe. Through the initiative, some 9,025 pieces of IT equipment (electronic devices such as laptops, tablets, screens, printers, phones, etc.) were delivered to Ukraine and 1,454 items to the SK hub awaiting transportation. The second phase of the initiative seeks to increase efficiency and effectiveness of deliveries.

[352] UNESCO, "Observatory of Killed Journalists" (accessed December 2024), Link.
[353] ITU Assessment of the Rehabilitation costs for 10 Stations of the Broadcasting Network of Ukraine. Link.
[354] Based on the full Single Project Pipeline list. These needs are not currently included in the 2025 budget.

According to IFC,[355] investing in the enabling environment can further improve competition in the telecommunications, postal services, and broadcasting sectors. Key measures include: (i) completing the rollout of 5G and implementation of best practices[356]; (ii) updating the radio-spectrum regulations to inter alia bring in line with the EU acquis in order to unlock funding under the Ukraine Facility; (iii) protecting open internet access; (iv) mandating that infrastructure be shared with independent operators; and (v) leveling the competitive playing field. Further strengthening of media freedom could attract additional private investors. All three sectors can mobilize private finance through commercial finance, the establishment of PPPs, or the privatization of specific services and market segments.

Digital transformation and accessibility should become the priority in terms of the policy setting and implementation. Ukraine's digital transformation will require implementation of key measures which will ensure safe and trustworthy digital services. Specifically, digitalization of public services to simplify the interaction between the state and citizens including Ukraine's efforts to adopt an act on supporting electronic identification schemes which are aligned with the international best practices including eIDAS Regulation and EU standards in this field. Furthermore, Ukraine's alignment with the EU Interoperability Framework can accelerate recognition of digital services across borders, particularly with European countries. A secure and efficient digital infrastructure requires Ukraine's introduction of legislative acts that align with best practices in cybersecurity (including NIS and NIS2 norms) protecting the country's digital infrastructure against cyberattacks.

Limitations and Recommendations for Future Assessments

The key data used for these estimations are from the GoU (sourced from postal service providers, public broadcasters, and internet service providers) and the Kyiv School of Economics. The figures for the broadcasting sector have not been updated and remain the same as on December 31, 2023. The data for the broadcasting sector are from 49 broadcasting stations that were damaged or destroyed. The International Telecommunication Union shared its assessment of rehabilitation costs of broadcasting stations in Ukraine. The data for the media sector are based on the assessment conducted by Lviv Media Forum and UNESCO, using surveys of media entities, the National Council on Television and Radio Broadcasting of Ukraine, and partners. The analysis of the media sector relies on the survey-based self-assessment of media organizations. The sample of media organizations was constructed using the register of the National Council on Television and Radio Broadcasting; this approach ensures regional representation by reflecting the type and size of media (print, television, radio, and online) in each area. While this approach enables extrapolation to the broader media market, limitations arise from the lack of formal accounting and financial reporting by some surveyed entities, and from the inability of some entities to quantify losses and damage in monetary terms. The figures from other sectors consider the units of damaged assets, provided by oblast as of November 30, 2024, and evaluate the incremental change since the period when previous figures on damaged assets were provided (December 31, 2024). There are three key recommendations for further assessments: (i) provide incentives for the private sector to report more detailed data in exchange for partly covering reconstruction and recovery needs; (ii) have

[355] Based on estimates from IFC, *Private Sector Opportunities for a Green and Resilient Reconstruction in Ukraine*, 2023.
[356] Best practices includes the implementation of the EU Toolbox for 5G Security. Link.

the GoU provide more granular data on broadcasting and public postal services' damage and losses; and iii) regular surveys and analysis of data for the media sector.

Table 29. Telecommunications, digital, and media: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	14.3	3.1	22.5
Chernihivska	110.9	112.1	275.3
Chernivetska	3.6	4.4	8.0
Dnipropetrovska	93.9	156.4	207.4
Donetska	391.3	323.8	971.8
Ivano-Frankivska	55.9	4.2	82.0
Kharkivska	344.5	333.5	929.4
Khersonska	279.6	124.0	486.0
Khmelnytska	0.4	2.1	2.3
Kirovohradska	12.8	2.2	19.9
Kyiv (City)	-	-	-
Kyivska	238.0	777.3	1,371.8
Luhanska	191.2	185.0	430.6
Lvivska	18.0	11.3	38.9
Mykolaivska	61.1	96.9	214.3
Odeska	30.4	46.0	65.2
Poltavska	1.4	6.1	9.2
Rivnenska	15.2	3.3	23.5
Sumska	43.4	37.8	97.9
Ternopilska	0.5	2.3	2.6
Vinnytska	2.4	4.3	6.6
Volynska	1.4	5.5	6.6
Zakarpatska	34.5	4.8	52.4
Zaporizka	289.0	129.4	530.1
Zhytomyrska	1.8	6.5	7.2
Nationwide (no specific region)	-	-	-
Total	**2,235.4**	**2,381.9**	**5,861.5**

Source: Assessment team, based in part on media information sources from Lviv Media Forum/UNESCO. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2025; needs cover 10 years between 2025 and 2035.

Table 30. Telecommunications, digital, and media: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investment	Total needs (2025–2035)
Reconstruction needs	Telecom fixed	1,266.5
	Telecom mobile	1,293.3
	Post	364.6
	Broadcasting	72.2
	Media	17.4
Recovery needs	Telecom fixed	1,266.5
	Telecom mobile	424.4
	Post	1,954
	Broadcasting	13.5
	Media	52.7

Total	**5,861.5**
Total needs met	**115.6**

Source: Assessment team, based in part on media information sources from Lviv Media Forum/UNESCO. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024. Media recovery needs have been calculated for a five-year time frame in line with market needs.

Water Supply and Sanitation

Context

Since February 2022, the water supply and sanitation (WSS) sector has experienced significant damage and losses and has struggled to provide services in difficult circumstances. Attacks on critical infrastructure have significantly affected WSS service provision. WSS infrastructure was damaged across various regions, including those temporarily not under GoU control, but most significantly along the shifting front lines. In those areas, water services provision is operating mostly in emergency mode with the aim of providing the most basic services to affected populations. In addition, power outages and problems with electricity and gas supply have significantly affected service delivery throughout the country, particularly in the areas where energy infrastructure has suffered attacks. As a result, since February 2022, millions of Ukrainians struggle with intermittent WSS services or with services that do not meet required drinking water standards. In parallel, people face water pollution and health risks (and related costs) because of absent or insufficient wastewater treatment. The WSS infrastructure in central and western part of Ukraine has suffered less damage than as compared country-wide, but it has faced additional pressure from the increased numbers of IDPs living there.

Compared with the situation assessment completed in February 2024 (RDNA3), **the current assessment shows a further increase in damage and losses.** The WSS sector's increasingly difficult financial situation is increasing the risk of service deterioration and affecting the resilience of service providers, particularly those in the frontline areas. During this period, no significant priority reforms of WSS provision or sector management have been undertaken; activities during 2024 have mostly focused on ensuring a desired, often basic, level of WSS services, replacing destroyed equipment, completing previous investments, and making emergency investments to restore water supply and wastewater service provision in the impacted areas.

Among the sector's key challenges are low levels of cost recovery, poor quality of drinking water, and excessive (substandard) levels of effluents released into the environment, coupled with the lack of adequate water quality monitoring systems and stretched capacity of service providers. Access to centralized piped water supply in pre-invasion Ukraine was at around 70 percent, and access to centralized wastewater collection and treatment services at around 50 percent, while 10 million people lacked access to safely managed water services. There is stark inequality between urban and rural areas in piped water access (80 percent in urban areas versus 34 percent in rural areas), flush toilet access (86 percent versus 26 percent), and sewer connections (75 percent versus just 2 percent). Existing WSS infrastructure is in most cases aged, and very often energy/process inefficient and oversized. Considering key requirements of the European Union water directives (Water Framework Directive 2000/60/EC, Urban Wastewater Directive 91/271/EEC, and Drinking Water Directive 2020/2184), this level of WSS services was low, although in line with the average for regional peers facing similar problems. The situation deteriorated significantly after February 2022, as maintenance was deferred, services were interrupted, and the financial situation worsened, resulting in overall service deterioration. This situation represents a major challenge for long-term sustainable WSS services and will need to be addressed in short-, medium-, and long-term planning of the sectoral reconstruction efforts.

The WSS sector governance framework remains highly fragmented, with administrative and legislative shortcomings that limit coordination between national and local administrations and hamper efficiency. The national level develops countrywide WSS policies that improve and increase the sustainability of WSS services, while municipalities are responsible for WSS service provision at local or regional level. A national economic regulator oversees prices for WSS utilities serving more than 100,000 people, but its influence is limited; the sector is in general insufficiently funded and relies on water tariffs that in most cases do not meet cost-recovery needs. This situation had been significantly aggravated since February 2022, as the WSS tariffs are effectively frozen for communal services (there have been limited tariff increases for commercial enterprises)[357], and they have not followed the increase in costs for delivering WSS services. This situation, coupled with massive revenue losses, has led to significant financial difficulties for water utilities. Many utilities companies cannot cover operating costs or fully service their financial obligations. To improve WSS service efficiency, there is a need to (i) optimize operation and service provision of existing WSS systems and facilities, (ii) revise the tariffs methodology and align tariffs with costs of operations, (iii) upgrade existing and construct new infrastructure (so that service performance can meet required national and EU standards, become sustainable, and achieve climate change resilience), and (iv) upgrade technological, financial management, and environmental capacity of WSS sector personnel.

Ukraine has taken a commitment to implement the provisions of the EU Water Framework Directive under the EU–Ukraine Association Agreement. The directive requires a satisfactory cost recovery of the provision of water services, allowing less than full cost recovery only if justified by mitigating factors (such as environmental and socioeconomic effects of the cost-recovery efforts, or the geographic and climatic conditions of the region or regions affected). Tariffs set below cost-recovery level are not compatible with the financial solvency of water utilities, unless utilities are supported with public subsidies. In existing difficult circumstances in Ukraine needs to develop a comprehensive strategy for achieving a transparent and stable WSS regulatory environment, and to incentivize actions that improve water utilities' financial health. A human right–based approach to all water policies, along with efforts to address water poverty, should be an integral part of government action.

Damage and Loss Assessment

The total cost of damage to the sector is estimated to be US$4.6 billion (Table 31). Of this amount, around US$0.7 billion (or 18 percent increase from RDNA3) is due to damage inflicted between December 31, 2023, and December 31, 2024. The damage stems mostly from remote air and drone attacks and from direct destruction in proximity to the front lines. Given the various challenges in data collection (especially in oblasts with ongoing military actions and those not currently under government control), this is a conservative figure and could underestimate actual damage. Based on the received data, the most affected oblasts are Kharkivska, Luhanska, Zaporizka, Chernihivska, Khersonska and Donetska. Significantly more damage will likely be found in Luhanska and Donetska oblasts once they are accessible to the government and damage can be safely reassessed. In terms of infrastructure, the greatest damage has been observed in large surface infrastructure, primarily wastewater treatment plants (28 percent of total damage) and wastewater networks (21 percent of total damage). Drinking water networks, while

[357] UNICEF, "Report 1: State of Play of the State Water Tariff Systems Prevailing Ukraine," December 30, 2024, Link.

mostly located underground, have also suffered significantly (accounting for 23 percent of total damage). Damage to this type of WSS infrastructure is dominant mainly because of its wide coverage and distribution across large urban and rural areas impacted.

The losses in the sector are estimated to be US$12.7 billion (Table 31), which is a 10 percent increase (US$1.1 billion) compared to February 2024. Around 37 percent of the total losses stem from the lost revenues from WSS services provision. The invasion has significantly reduced water consumption, particularly in the industrial sector, because many industrial activities have been reduced. In addition, the collection rate and the number of consumers has fallen significantly (especially in war-affected oblasts) and has only partially recovered. The next biggest loss category after lost revenues is additional costs for WSS service provision due to increased energy and fuel costs (around 21 percent of losses; energy is the second biggest component in cost structure for Ukrainian WSS utilities). The rest of the economic losses are associated with increased prices of materials and equipment, lack of maintenance, water losses, and required demolition and debris management. The difficulty of collecting reliable data for losses represents a major constraint and highlights the need to establish data systems to reliably inform sector programing. Geographical distribution of losses mostly corresponds to the geographical distribution of damage. Based on the received data, the oblasts suffering the largest losses are Kharkivska, Luhanska, Chernihivska, Khersonska and Donetska, which is mostly in line with distribution of damage per oblast.

Human impact: Millions of Ukrainians face interrupted, limited, or no access to safe water and sanitation services. The WASH Cluster estimated that 8.5 million[358] people were in need of essential WSS services. Local WSS utilities are doing their best to address problems, but with decreased revenues due to lower collection rates and increased costs, they lack sufficient financial resources. Mobilization of staff and work interruptions due to air raids and electricity outages are additionally straining service provision. The sector is focusing on short-term solutions to restore and maintain basic services and is aiming to complete ongoing investments started before February 2022. This is particularly true in the oblasts in the east of the country, where damage and losses are the largest. In addition to problems in accessing drinking water and sanitation services, people also face exposure to environmental pollution, including hazardous substances and pathogens in untreated or inadequately treated wastewater.

Recovery and Reconstruction Needs, including Build Back Better

The total reconstruction and recovery needs are estimated at US$11.3 billion for the 10 years from 2025 to 2035 (Table 32). Oblasts with larger needs include those most affected, plus some with below-average service levels before February 2022, and include Luhanska, Kharkivska, Zaporizka, and Donetska oblasts. These estimated needs factor in costs associated with inflation and building back better in alignment with Ukraine's reconstruction strategy, which prioritizes decarbonization as well as reforms and institutional capacity building to meet European Union accession criteria. The short-term needs emphasize maintaining service delivery and strengthening local technical and operational capacity to allow for subsequent reconstruction. The most pressing needs in the short term relate to (i) upgrade of service quality and reliability, which includes repair and reconstruction of critical assets; (ii) preparation of local (municipal/oblast) reconstruction and recovery strategies and action plans; and (iii) strengthening of

[358] OCHA, "Ukraine Humanitarian Needs and Response Plan," January 2025, Link.

capacity for collecting and analyzing data. In some places, water laboratories were also destroyed, and existing laboratories require investments in modern methods and equipment, as well as capacity-building for personnel. The long-term needs focus on (i) reconstruction of existing and development of new water supply and wastewater infrastructure (the largest investments are needed in reconstruction of wastewater treatment plants and of sewerage and water supply networks); (ii) optimization of facility and utility operations and operating costs; and (iii) upgrading of technological, financial management, and environmental capacity of WSS sector personnel.

To develop and improve WSS service delivery and meet EU requirements, the WSS sector needs to be substantively upgraded and reformed. Currently, the WSS sector's responsibilities are delegated to the local level but without sufficient financial resources. A 2021 World Bank policy note recommends that reform efforts seek three key goals simultaneously: (i) improving governance to increase access, transparency, and accountability; (ii) enhancing regulation to improve performance and service quality; and (iii) reforming the funding approach to ensure cost recovery and sustainability, as well as diversify funding options.[359] These WSS reforms remain relevant, and should be combined with the build back better approach to deliver significant improvements in service quality and sustainability. A further recommendation is to explore and collect data—currently not available—on the impacts of the deterioration of the local drinking water quality, including data on the health of affected populations and the negative impact on the environment from disruption in wastewater collection and treatment (surface water and groundwater). Such data will be useful for more comprehensively assessing the impacts on WSS service provision and the environment and can help guide the design of the reconstruction and recovery measures.

Currently, private sector involvement in WSS in Ukraine is very limited, but it might be expected that public-private partnerships (PPPs) or similar arrangements could become more common following the war, as the public sector will likely be unable to cover all the sectoral reconstruction needs. Instead of moving quickly to comparatively advanced forms of PPP, it is recommended that Ukraine adopts a more gradual approach to private sector participation, focusing on improving the capacity and operation of existing utilities.

Limitations and Recommendations for Future Assessments

The damage and losses presented here were largely extrapolated from analyzing the severity of the fighting across regions and were based on informed assumptions and information from multiple sources. The estimated numbers are indicative and not to be taken as precise values. Future data collection efforts and assessments would benefit from segregating infrastructure assets into urban and rural, and from collecting and aggregating verified data at the national level. It should be noted that data on needs met (previous damage that was repaired) over the previous 12 months are not comprehensive/robust and require improvement to be used in current damage assessment. Data on needs met could be collected in a centralized database and used for monitoring reconstruction progress. In addition, any future needs

[359] World Bank, "Ukraine Water Supply and Sanitation Policy Note: Toward Improved, Inclusive, and Sustainable Water Supply and Sanitation Services," 2021, Link.

assessment might consider accounting for additional needs due to increased numbers of IDPs in central and western areas.

Table 31. Water supply and sanitation: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	0.6	0.1	1.1
Chernihivska	328.8	50.8	618.0
Chernivetska	-	-	-
Dnipropetrovska	104.2	2.1	181.9
Donetska	514.6	42.8	930.4
Ivano-Frankivska	-	-	-
Kharkivska	831.2	91.7	1,525.6
Khersonska	368.7	41.7	677.6
Khmelnytska	-	-	-
Kirovohradska	-	-	-
Kyiv (City)	-	-	-
Kyivska	171.7	16.1	312.4
Luhanska	1,590.5	247.0	2,990.6
Lvivska	-	-	-
Mykolaivska	80.5	5.5	144.4
Odeska	31.3	0.4	54.4
Poltavska	14.8	0.2	25.7
Rivnenska	0.0	0.0	0.1
Sumska	19.6	0.9	34.7
Ternopilska	-	-	-
Vinnytska	-	-	-
Volynska	-	-	-
Zakarpatska	-	-	-
Zaporizka	545.8	58.6	1,000.1
Zhytomyrska	0.0	0.0	0.0
Nation-wide (no specific region)	-	12,150.8	2,756.3
Total	**4,602.4**	**12,708.7**	**11,253.3**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026; needs cover 10 years between 2025 and 2035.

Table 32. Water supply and sanitation: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Water treatment facilities	697.5
	Sewage treatment plants	1,899.0
	Water pumping stations	436.8
	Sewage pumping stations	539.1
	Water supply networks	1,618.1
	Sewer networks	1,422.8
	Wells	26.3
	Laboratories	3.0
	Clean water tanks	57.3
	Water towers	203.7
Service delivery restoration needs	Demolition and debris management	576.8
	Facility operational costs	1,016.6

	Increased energy/fuel consumption support	2,756.3
		11,253.3

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024.

Municipal Services

Context

The invasion has continued to exacerbate the strain on municipal service delivery and to impose substantial additional responsibilities on local governments. Before February 2022, due to decades of underinvestment and poor maintenance, municipal service provision across all regions was irregular and had low coverage rates. For example, the solid waste management (SWM) sector was in need of urgent investment and reforms, with an estimated coverage of only 79 percent.[360] The gaps in infrastructure and service delivery could also be seen in delayed repairs to local roads,[361] the need for better coverage of sidewalks[362] and streetlighting (38 percent),[363] limited maintenance of green spaces,[364] and inadequate numbers of and maintenance of cemeteries.[365] With increasing damage to municipal assets and infrastructure networks, the delivery of municipal services and infrastructure has deteriorated, while local needs have increased. Local governments, responsible for a wide range of services and infrastructure, face numerous capacity constraints[366] even as their burden has grown exponentially. Local governments remain at the helm of several efforts to implement recovery measures and emergency programs, such as providing essential support to internally displaced persons (IDPs), coordinating recovery at the local level, providing timely data and information to national ministries, ensuring continued service delivery to residents, and creating conditions for recovery and resilience. The overall functioning of local governments is crucial for determining the quality and pace of recovery, and it directly impacts citizens' quality of life through the provision of services, local economic development, and sustainability.

Unlike RDNA3 (but like RDNA1 and RDNA2), RDNA4 excludes district heating assets from the municipal service sector assessment.[367] The RDNA4 assessment continues to cover five categories of assets: SWM, public infrastructure and facilities, local administrative buildings, sports facilities, and local mobility assets.[368] Within each asset category, not all asset types are included, given data limitations; however, the categories reflect the diverse range of infrastructure and services that fall under the remit of local governments.

Despite their capacity limitations, municipalities continue to demonstrate a dedication to providing services while prioritizing recovery of critical infrastructure and emergency measures. Since February 2022, local budget expenditures for housing and communal services have on average increased substantially. This increase in expenditure indicates that municipalities are consistently directing resources toward additional services, including temporary housing for IDPs and other groups; and that

[360] Ministry for Development of Communities and Territories of Ukraine (MDCT), "State of the Field of Household Waste Management in Ukraine for 2021" [in Ukrainian], Link (as reported in RDNA1).
[361] MDCT, "Analysis of the State of the Road and Bridge Industry in 2021" [in Ukrainian], Link (as reported in RDNA1).
[362] Ibid.
[363] MDCT, "Analysis of the State of the Road and Bridge Industry in 2022" [in Ukrainian].
[364] MDCT, "State of the Field of the Green Economy for 2021" [in Ukrainian], Link (as reported in RDNA1).
[365] As of 2022, an additional 500 cemeteries were needed, and 381 existing cemeteries required upgrades. MDCT, "Analytical Report on the State of the Burial Industry in 2022" [in Ukrainian].
[366] Local governments deliver "hard" municipal services (like local roads, solid waste management, utilities, public facilities, and urban amenities) along with social services, while also fulfilling their civil and environmental protection duties.
[367] Considering the distinct nature of its service delivery network and infrastructure and its relation to the energy sector, district heating is included in the energy sector assessment in the RDNA4.
[368] All other utilities and housing are covered by infrastructure and housing sectoral assessments respectively.

they are undertaking necessary repairs and operations to ensure continued delivery of services to residents.

Damage and Loss Assessment

The total damage to the municipal services sector is estimated at US$2.8 billion (Table 33). Although the overall damage to sectoral assets has increased, the total damage estimate is US$2 billion lower than in RDNA3. There are two main reasons for this. First, RDNA4 excludes district heating (in RDNA3, district heating damage was estimated at US$2.07 billion), and second, RDNA4 treats several asset types in the sports facilities category as part of the education sector. Damage across all categories has increased since RDNA3 (except for the sports facilities category, where the regrouping of assets resulted in a decline). For assets in the public facilities, spaces, and amenities category—which includes municipal assets like recreation centers, libraries, cemeteries, urban parks, and public squares—damage amounts to US$977 million. This represents the largest share of overall sector damage at 34.3 percent of the total. The local mobility category, which includes damage to sidewalks and street lighting, is estimated at US$960 million and represents the second largest share of damage at 33.7 percent. Sports facility assets suffered damage valued at US$374 million, while local administrative buildings and service centers suffered US$352 million in damage. Some 7 percent of all local service centers, which house vital municipal service providers, operations, and goods and equipment, have been impacted, again indicating the rising constraints local governments face as they carry out their functions. Damage to the SWM subsector was US$185.8 million as of December 31, 2024—a significant increase of 47 percent since RDNA3.

Damage is concentrated in the regions of Donetska, Zaporizka, Luhanska, Khersonska, and Kharkivska Table 33). Together they account for over 70 percent of the total cost of damage in the municipal services sector. Donetska accounts for 27 percent of the overall damage estimate, followed by Zaporizka, representing 13 percent of the total.

The losses in the municipal services sector are estimated at US$6.8 billion (Table 33) and include the cost of demolition and debris removal, loss of local government revenues, increased expenditures, and loss of revenue of waste collection entities. Over 70 percent of sectoral losses relate to revenue losses borne by local governments; these are valued at US$4.8 billion and include loss of locally collected and retained revenues, such as local taxes, administrative fees, charges, and tariffs.[369] Estimations of revenue losses for local governments include both local shares of personal income taxes[370] and own-source revenues.371 Moreover, during the 34 months between February 2022 and December 2024, local governments have also incurred additional costs and expenses associated with their provision of additional services, including services for IDPs—e.g., registration bureaus, subsidies for housing and utilities, urgent services, repairs and maintenance (including procurement of additional equipment for

[369] The loss was estimated by comparing prewar monthly local revenues with those reported during the 34 months from February 2022 to December 2024 and 18 months additional. To reflect the impact of the proximity of hromadas in a particular region to active conflict zone as well as temporarily captured areas, a deterioration coefficient is used, adjusted based on the anticipated situation in the region, either increasing, decreasing, or remaining constant. *See* Government of Ukraine. Link.

[370] Unlike own-source revenue, personal income taxes registered an increase in most cases, and thus no loss was registered in this category.

[371] Municipal own-source revenue is composed of local taxes (e.g., single tax, property tax and fees), nonutility user fees, administrative fees, and any local capital revenue.

waste removal), burial services, etc. These costs amount to an estimated US$1.4 billion and account for 22 percent of the total losses.[372] Debris removal and loss of revenue from waste collection entities (both public and private) are accounted for at US$367 million and US$94 million, respectively. Sectoral loss estimations relied on available local budget data and assumptions derived from analysis of the intensity of fighting, the military budget code, and prewar baseline information on household waste collection, waste disposal tariffs, and waste volumes.

Human impact: Impacts on service delivery and communal facilities significantly affect residents' quality of life. For example, within the SWM subsector, residents (including IDPs) have experienced disruptions in services due to damage to SWM assets, the cessation of operations of several private waste collection companies, general labor force shortages, the influx of IDPs in certain areas, and the increasing amounts of debris. More often than not, local governments do not have sufficient capacity to cater to the growing waste collection and processing needs while simultaneously filling gaps in SWM service delivery. As a result, there are delays in waste collection and an increasing number of ad hoc open dump sites, which may contain hazardous materials such as asbestos. This situation is compromising people's health in the short term and may have long-lasting environmental and health consequences. Similarly, damage to municipal administrative centers, which contain operational equipment and essential civil records and files, has limited or slowed down the provision of essential services and support to vulnerable groups, including IDPs. Limited access to notarial services, advocacy, and legal representation has left residents vulnerable, further complicating their ability to navigate administrative procedures. Assets such as public parks, public spaces and sports facilities play a crucial role in human well-being by promoting social interaction, mental health, and physical fitness as well as rehabilitation. Yet, many of these spaces have been destroyed, neglected, or repurposed, depriving residents—especially youth—of opportunities for engagement. Finally, damage to local roads, sidewalks, and streetlighting has constrained mobility in cities and towns, which in turn has limited households' ability to procure critical goods and services in a timely fashion and has also dampened employment opportunities for IDPs.

Recovery and Reconstruction Needs, including Build Back Better

The total recovery and reconstruction needs are estimated at US$6.89 billion over a period of 10 years (Table 34). The largest share relates to the reconstruction of municipal and communal assets for SWM, local mobility, public spaces, and other facilities; the next largest share is for the repair and stabilization of prioritized public and service delivery infrastructure to ensure continued service provision and increased service delivery in IDP hubs.

It is crucial to acknowledge and prioritize the role of the sub-national and local authorities in the recovery process and—in alignment with the Ukraine Plan's strategic objective of decentralization—to empower them with strengthened capacities at both operational and technical levels. The role of local governments goes beyond the responsibility for municipal assets, and their centrality in the overall recovery and reconstruction across all sectors needs to be acknowledged and supported. Local governments are critical for implementing, coordinating, and planning measures stipulated by individual

[372] Based on analysis of local budget expenditure data for housing and communal services; see Open Budget web portal, "BOOST Analysis: Expenditures," Link.

functional sectors and line ministries. This reality does not just necessitate adopting an integrated and place-based approach at the local level and ensuring the presence of strong coordination mechanisms; it also requires ongoing capacity and financing support for local governments. Comprehensive, place-based strategic planning at the local level will be required to ensure no-regret investments, and institutional processes will need to be simplified to attract financing flows from different public and private sources. Considering the significant revenue losses and increased expenditures municipalities continue to face, they must be provided with a functional and predictable mechanism for supporting the implementation of projects and to strengthen capacity for the operation and maintenance or restored and reconstructed asset. In addition, to overcome the likely challenges of resource constraints and unstable cash flow during the recovery period, local governments will at the outset need to undertake evidence-based identification of prioritized needs and associated sequencing of recovery and reconstruction measures, particularly for critical infrastructure.[373]

Limitations and Recommendations for Future Assessments

In RDNA4 as in previous RDNAs, the gap in data collection and reporting significantly limits the accuracy of calculations. Automated recording of damage in the RDDP could substantially enhance analytics and the calculation of damage to municipal assets. Most calculations still rely on assumptions due to the lack of data from the local level on (for example) damage to street lighting and other mobility assets, or assets' average size. This issue likely arises from the absence of a comprehensive prewar inventory of municipal assets. Prioritizing the recovery of assets based solely on the level of recorded damage and its estimated monetary value is not always the best approach. It may shift the focus of recovery efforts to objects with the highest estimated damage, even though some assets with lesser recorded damage may be more important for hromadas' operations. For example, SWM assets, which were underdeveloped before February 2022, are recorded in in the RDNA4 as the least costly assets in the municipal services sector. However, the sustainability of SWM is crucial, and these assets may need more attention despite their lower level of recorded damage. Additional consideration in recovery efforts should be given to the ongoing internal migration of the population. Underestimating or overestimating this phenomenon may hinder the recovery effectiveness of particular assets and consequently lead to the wastage of scarce resources.

Table 33. Municipal services: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	14.4	80.6	35.5
Chernihivska	139.0	92.4	329.2
Chernivetska	5.8	55.4	14.4
Dnipropetrovska	50.4	792.0	121.9
Donetska	778.2	1,547.1	1,872.1
Ivano-Frankivska	2.4	28.8	7.0
Kharkivska	264.7	592.9	629.8
Khersonska	311.4	407.0	740.7
Khmelnytska	6.1	62.4	15.2
Kirovohradska	9.8	59.0	24.1

[373] This may also entail strong co-ordination across hromada boundaries and simultaneous improvement in service delivery across the entirety of the functional area (not limited to individual hromada jurisdictional boundary).

Kyiv (City)	34.4	597.8	81.6
Kyivska	150.4	315.6	359.7
Luhanska	326.3	518.0	778.2
Lvivska	7.0	126.4	18.9
Mykolaivska	167.3	156.1	396.7
Odeska	35.1	182.5	85.0
Poltavska	10.2	98.6	26.2
Rivnenska	2.4	50.8	6.2
Sumska	101.7	83.8	239.6
Ternopilska	2.4	41.8	6.4
Vinnytska	11.6	119.6	29.1
Volynska	4.5	24.0	11.2
Zakarpatska	32.6	26.3	78.8
Zaporizka	362.2	639.6	869.9
Zhytomyrska	47.8	96.5	112.7
Nationwide (no specific region)	-	-	-
Total	**2,878.1**	**6,795.1**	**6,890.0**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026; needs cover 10 years from 2025 to 2035.

Table 34. Municipal services: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Reconstruction of municipal and communal assets including Solid waste management, local mobility, public spaces and other facilities	4,533.0
	Debris processing and disposal of communal assets	372.1
Service delivery restoration needs	Technical works and policymaking including planning, assessments and engineering and analytical studies	194.3
	Repair, and stabilization of prioritized public and service delivery infrastructure for continued service provision including increased service delivery in IDP hubs	1,337.5
	Operational costs and organizational arrangements	453.3
Total		**6,890.0**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024; IDP = internally displaced person.

CROSS-CUTTING AREAS

Environment, Natural Resource Management, and Forestry

Context

Russia's invasion of Ukraine has caused widespread environmental loss and damage for the past 34 months. Combat operations, explosions, fires, harmful chemicals, and the establishment of minefields and unexploded ordnance (UXO) have caused direct and indirect damage to numerous ecosystems, including forests, resulting in significant environmental and socioeconomic losses. Compounding the challenges faced by the sector are frequent attacks on critical logistic infrastructures, particularly energy facilities. The destruction of residential and commercial buildings (many containing asbestos and other hazardous substances) as well as of infrastructure, industrial facilities, and energy installations has resulted in enormous waste management problems, increased air, water, and soil pollution, all of which pose serious threats to public health and various ecosystems, but also hampers reconstruction.

Heavy damage to relevant institutions, including the Ukrainian State Forest Management Planning Association (Ukrderzhlisproekt), limits the country's capacity to address these challenges and support environment, natural resources, and forest management. Much of the sector's personnel has been mobilized into the military, and much of its equipment either redeployed for military use or destroyed. Many landscapes, including protected areas and forests are inaccessible due to the presence of UXO and minefields, which hamper efforts to prevent fires and implement other protective measures. With management of forests and forest fires so limited, the likelihood of wildfires and pest outbreaks increases, with negative economic consequences for rural people, the provision of ecosystem services, and the supply of wood essential for Ukraine's recovery.

Since RDNA3, the rate of new damage has moderated, and the precision of damage estimates has improved. Significant areas were damaged early in the invasion, and these continue to suffer losses. The breach of the Kakhovka Dam on June 6, 2023, stands out in terms of scale and impact, as hundreds of square kilometers were flooded and thousands of square kilometers of reservoir and important wetlands desiccated; 19 months later, these ecosystem services have still not been restored. Fire continues to be the main source of impact to forests and natural landscapes, although since RDNA3 was completed, more robust data sources have emerged, and data on forest fire damage from the new National Forest Inventory (NFI) and on accessibility from the State Forest Enterprise have been used to recalibrate data from existing sources. Additionally, the scope of study has expanded to identify the needs for asbestos-containing debris from damaged buildings, given its environmental and public health risks.

Damage and Loss Assessment

The total cost of damage to the forest sector is estimated to be US$1.75 billion (Table 35), a reduction of 46 percent from RDNA3. The lower estimate stems from the effect of a 15 percent weaker hryvnia (compared to RDNA3) and reductions in the estimated area of burned or inaccessible forests. The NFI identified 1.7 million ha potentially affected by the war and 66,647 ha of burned forest.[374] The fire bulletins

[374] Viktor Myroniuk et al., "Nationwide Remote Sensing Framework for Forest Resource Assessment in War-Affected Ukraine," *Forest Ecology and Management*, July 2024, Link.

used for RDNA3 indicated 211,574 ha of fire-damaged forests by the end of 2023; this figure rose to 247,690 ha during 2024. NFI data were available only for 2023 and so do not reflect fire damage that took place during 2024. However, the area burned by the end of 2024 can be estimated by applying a pro rata adjustment based on the NFI results and the fire damage records at the end of 2023. The result is 78,437 ha, and this figure is used in the RDNA4 analysis. Using NFI data for forest damaged by fire for 2023 as a new baseline, there was a 14 percent increase in damage to forests and natural landscapes in 12 months, reaching 698,845 ha.

The total losses to the forest sector, including burned areas, air pollution, and protected areas damaged by the Kakhovka Dam breach, are estimated at US$28 billion, an increase of US$1.4 billion over the RDNA3.[375] Although the estimated area of burned forest has decreased, losses have increased because an additional 12 months have passed and because burned agricultural lands, natural landscapes, and settlements have increased. Losses are now dominated by the Kakhovka Dam breach (estimated at US$14.1 billion, or 51 percent of losses); the loss of ecosystem services from burning of "other natural landscapes"[376] (US$9.8 billion, or 35 percent); and air pollution impacts (US$3.3 billion, or 12 percent). New data from the State Forest Enterprise indicate that 1.47 million ha of forest are potentially contaminated by mines, confirmed as mined, temporarily not under government control, or directly affected by the invasion.[377] The comparable estimate in RDNA3 was based on broad estimates of forest area and percentage of each oblast affected by minefields; it totaled 2.77 million ha.

Human impact: The environmental damage poses profound and enduring risks to human health and well-being that extend far beyond immediate impacts. The destruction of assets (infrastructure, industrial facilities, and buildings), lack of waste management and safe storage or destruction of hazardous substances (including explosives), and forest fires triggered in combat zones release hazardous substances into the environment, contaminating soil, water, and air. This contamination will persist for decades, leading to chronic health problems such as respiratory diseases, cancers, and neurological disorders. Damage to ecosystems and biodiversity also undermines the essential services they provide to human communities, such as clean water, fertile soil, and climate regulation. The destruction of forests, natural landscapes, and protected areas reduces forest and agricultural productivity and increases vulnerability to climate extremes, directly affecting food security, people's livelihoods, and the resilience of rural communities located near front lines. In urban areas, environmental degradation can worsen living conditions, particularly for vulnerable populations, contributing to long-term socioeconomic instability.

Recovery and Reconstruction Needs, including Build Back Better

The total reconstruction and recovery needs are estimated at US$2.8 billion over the next 10 years (Table 36). Understanding the extensive environmental impacts of the invasion is crucial to identifying

[375] The difference between the quantum of environmental damage estimated by RDNA4 and by the Ministry of Environmental Protection and Resources (€73.2 billion to the end of 2024) is due to the wider scope of environmental receptors addressed by the ministry (including air pollution from oil/gas depot fires, pollution of soil and water resources, damage to nature protection fund sites, etc.). The confirmation, validation, and use of these highly detailed and sensitive data was regarded as beyond the application of the RDNA methodology.

[376] Defined as open forest (15–70 percent tree canopy), shrubs, herbaceous vegetation, bare/sparse vegetation, herbaceous wetland, and unknown vegetation under annual dynamic Copernicus Global Land Service Land Cover map at 100 m spatial resolution (CGLS-LC100).

[377] State Forest Enterprise, "Forest Industry of Ukraine" [in Ukrainian], Link.

recovery needs. This requires ongoing monitoring, detailed environmental assessments, and building of government officials' capacity to address challenges effectively. Key priorities include continuous monitoring of the environmental impacts (including forest fires and other impacts on forests) and assessing contaminated sites, asbestos-containing damaged buildings, and protected areas. Meeting these priorities requires an estimated US$291.1 million. Identifying and carrying out targeted interventions to mitigate risks to human safety and the environment at priority sites is estimated at US$800 million. Coordinating Ukraine's recovery efforts to embody green economy and low emissions is estimated at US$20 million, pilot remediation and restoration of pollution affected sites using nature-based solutions and constructed wetlands at US$80 million, and reforestation at US$388 million. Strengthening national authorities' capacities by replenishing staff mobilized to the military, providing necessary equipment and personnel training is vital and is estimated at US$107.8 million. As detailed in the Ukraine Facility Plan, the new single state forest operator will improve efficiency and coordination of recovery efforts, including building back a stronger and more climate-smart wood-processing industry and forest-based value chains that align with the EU cascading principle (which aims to maximize value addition and displace fossil fuels).[378] The state is also moving to separate operational from supervisory functions to control illegal, unregulated, and unreported tree felling, in part by updating the necessary regulations. Initial discussions on the establishment of a national environmental protection agency took place in 2024. This institutional reform remains essential to ensure the sustainable and resilient rehabilitation of the impacted environment and to safeguard the country's future environment and biodiversity.

Limitations and Recommendations for Future Assessments

The assessment and capacity-building analysis is largely qualitative but provides some estimates for future needs. Needs related to contaminated sites, protected areas, and other natural landscapes and ecosystems can be assessed only after a detailed damage assessment. Estimating the needs for reducing air pollution, water and soil pollution, as well as improving waste and hazardous waste management requires further evaluations for each sector or subsector (energy, transport, extractives, metallurgy, chemical, urban, etc.) based on the planned application of best practices and modern technologies.

While more precise estimates have been applied for forest damage and inaccessibility, RDNA4 is still hampered by significant gaps in the data on invasion-related environmental impacts in Ukraine. The data available are incomplete or lack validation of field data integrity. This means that it was not possible to assess the damage and needs resulting from pollution of soil, water, and ecosystems, including pollution of the marine environment (such as downstream effects of the Kakhovka Dam breach and leaks of oil and other substances), accumulation of waste and hazardous waste or the long-term consequences for climate change and biodiversity. It was also not yet possible to assess actual health costs of pollution, including air pollution or asbestos pollution, as exposure data were not available. The National Forest Inventory began before February 2022 but was then constrained both by lack of access to territories not under government control and by limited government funding. A remote sensing–based inventory was proposed as an interim alternative to the NFI, and a detailed forest cover assessment was conducted using imagery at the end of 2023. This offered a technically and statistically robust snapshot of forest

[378] Ukraine Facility, "Ukraine Plan 2024–2027," Link.

damage, carbon stock, and growing stock to the end of 2023—one that is superior to the fire bulletins, which risked counting the same area twice, especially during 2022, and did not assess the degree of damage. This analysis still relies on the fire bulletins for assessment of fires affecting agriculture and natural landscapes; while less complex than forest fires, these may merit further examination. The hryvnia was depreciated by 15 percent between RDNA3 and RDNA4, but as only about 14 percent of losses were calculated in hryvnia, this had limited impact on the overall assessment of losses. In the case of damage, 43 percent of the RDNA4 value is derived from growing stock losses, which are calculated in hryvnia; thus, the depreciation compounded the reduction in damage due to reduced burned areas.

Forests and natural ecosystems will take much longer than 18 months to recover their ecosystem service capacity. The minimum recovery period for provisioning services in the fire-damaged forest areas will be 20 years or more (longer for ecological services), and not the 18 months adopted for the RDNA. New nurseries alone will require at least four years to establish. The area of Emerald Network sites affected by fire was not treated separately from other forest and natural sites under this analysis, an approach that should be reviewed in future.[379] Also in the future, establishing ecosystem service values for the Ukraine context could avoid the need to utilize global or regional averages. Finally, data on needs already met were not available and consequently were not assessed. However, such data are important to collect in order to monitor the recovery process.

Table 35. Environment, natural resource management, and forestry: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	-	-	8.8
Chernihivska	59.2	638.6	38.5
Chernivetska	-	-	1.4
Dnipropetrovska	16.0	18.0	3.4
Donetska	379.6	3,497.1	105.7
Ivano-Frankivska	-	-	1.6
Kharkivska	384.0	1,834.8	137.4
Khersonska	249.6	10,413.5	65.5
Khmelnytska	0.2	-	8.8
Kirovohradska	0.0	0.0	2.2
Kyiv (City)	-	-	-
Kyivska	113.1	1,027.7	54.9
Luhanska	373.5	3,000.5	160.6
Lvivska	-	-	3.9
Mykolaivska	28.4	930.6	14.7
Odeska	0.0	-	1.3
Poltavska	0.0	0.2	2.8
Rivnenska	-	-	3.3
Sumska	7.4	41.2	12.4
Ternopilska	-	-	5.7
Vinnytska	-	-	4.2
Volynska	-	-	9.0
Zakarpatska	-	-	7.7

[379] For information on the Emerald Network, see European Environment Agency, "Emerald Network Data—The Pan-European Network of Protected Sites," January 4, 2024, Link.

Zaporizka	98.8	6,337.0	9.7
Zhytomyrska	28.9	178.5	16.3
Nationwide (no specific region)	-	-	2,137.5
Total	**1,738.8**	**27,917.8**	**2,817.5**

Source: Assessment team. *Note:* Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026; needs cover 10 years between 2025 and 2035.

Table 36. Environment, natural resource management, and forestry: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investment	Total needs (2025–2035)
Reconstruction needs	Reforestation	388.0
	Forest roads	11.1
	Buildings	4.3
	Building debris removal	0.2
	Vehicles	63.5
	Equipment	30.4
	Office equipment	17.5
	Harvesting equipment	124.8
	Nurseries	40.2
Recovery needs	Assessment of contaminated sites	84.1
	Assessment of forests and protected areas	10.0
	Assessment of asbestos-containing debris	175.0
	Monitoring of environmental impacts	22.0
	Capacity building (trainings)	11.3
	Risk reduction measures	800.0
	Equipment supply	96.5
	Coordination and demonstration action for green recovery	100.0
	Improving the ecological and technical condition of water bodies in the Kyivska oblast	4.8
	Biotechnological restoration of soils affected by toxic substances after military operations in the pilot territory (Chernihivska oblast)	5.3
	Creation of a modern laboratory for the State Environmental Inspection of Ukraine	3.2
	Creation of a comprehensive system for handling radioactive materials generated during decommissioning of power units and dismantling of unstable structures of the "Shelter" facility	13.6
	Creation of infrastructure for recovery, regeneration, and disposal of ozone-depleting substances and fluorinated greenhouse gases	0.3
	Creation of the Central Reference Laboratory	2.1
	Rehabilitation and re-naturalization of nature conservation areas	26.2
	Implementation of climate change adaptation measures	158.8
	Infrastructure for visiting in national natural parks	616.6
	Creation of a network for monitoring atmospheric air quality	7.7
	Construction of a forestry road	0.002
	Transition to a mechanized method of timber procurement using harvesters and forwarders	0.01
	Improvement of the existing forest fire protection system	0.02
Total		**2,817.5**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024; Kakhovka Dam recovery estimates are not included.

Emergency Response and Civil Protection

Context

This sector continues to be at the forefront of the war and associated emergency response. The GoU, through the State Emergency Service of Ukraine (SESU),[380] the National Police of Ukraine (NPU),[381] and other institutions and sector stakeholders, provides immediate support to the affected populations. Emergency response buildings and vehicles were damaged, affecting the capacity for response. Since February 2022, there has been a substantial increase in the provision of emergency services, including fire rescue, specialized response, and response to chemical, biological, radiological, and nuclear (CBRN) threats. The provision of emergency services continues to be affected by prewar challenges, specifically inadequate or insufficient building stock and vehicles, as well as specialized equipment in need of updating. The invasion has increased the risk of industrial and other accidents linked to damaged infrastructure. Since the RDNA3, some immediate sectoral needs have been met through public budget and donations, including through the Union Civil Protection Mechanism (UCPM); however, these are limited compared to the needs for recovery/reconstruction and broader modernization.

Damage and Loss Assessment

The total damage is estimated to be US$365.96 million (Table 37), a slight decrease from RDNA3 (US$385.66 million). SESU buildings, including hydromet buildings, main regional offices, and rescue/response centers, accounted for 28.54 percent of the total damage, while NPU buildings represented 50.48 percent. The remaining damage was attributed to SESU and NPU vehicles that were destroyed or seized. The regions with the highest damage were Khersonska (US$90.90 million), Luhanska (US$57.13 million), and Kharkivska (US$50.69 million). Compared to RDNA3, there is a slight reduction of about 5 percent in the overall damage; this is due to (i) updated assumptions and unit costs considering completed/ongoing reconstruction activities; and (ii) the updated exchange rate.

Loss is estimated to be US$495.76 million (Table 37), a slight increase from RDNA3 (US$489.8 million. This figure includes operational losses related to additional time worked in emergency situations (US$473.3 million, or 96.6 percent of the total loss) and debris removal (US$16.5 million, or 3.4 percent). The estimated loss is highest in the City of Kyiv (9.52 percent), Volynska and Lvivska regions (6.87 percent), and Kharkivska region (6.29 percent).

Human impact: This sector has provided essential and immediate support to affected populations and contributes to efforts to alleviate direct impacts. Since 2022, SESU has responded to an average of 479,055 departures for interventions, 63,182 incidents to eliminate the consequences of shelling, and 40,855 pyrotechnic operations annually; this is a 34.35 percent increase since 2021. On average, there have been 86,115.33 fires per year, resulting in 4,542 deaths and 4,692 injuries. In 2024, there was an increase across

[380] SESU employs 58,300 people, including 11,500 women (19.7 percent) and 46,800 men (80.3 percent). As part of SESU, 25 oblast-level bodies govern emergency response services, including firefighting, rescue units, and operation-communication centers. The early warning system under SESU is supported by the Ukrainian Hydrometeorological Center and covers both hydrometeorological conditions and geophysical processes.

[381] The National Police employs 135,200 people, including 37,400 women (28 percent) and 97,800 men (72 percent). The structure consists of 26 territorial bodies, which include district departments and police stations, interregional territorial bodies with district subdivisions, state institutions such as the Service Units Support Center and the Aviation Support Center, professional (vocational) education institutions with specific training mandates, as well as preschools and children's health and recreation facilities.

all response categories, with the number of interventions up by 2.91 percent and the number of fires up by 31.49 percent since 2023. The invasion also continues to affect sector personnel through heightened levels of stress and trauma.

Recovery and Reconstruction Needs, including Build Back Better

The total recovery and reconstruction needs are estimated at US$2.4 billion over 10 years (Table 38). The increase in the needs since RDNA3 (US$2.3 billion) derives from the increased demand for emergency response services. Needs related to NPU buildings account for US$495.47 million, while needs related to SESU buildings account for US$407.52 million. The largest share of the needs is for the procurement of vehicles (estimated at US$1.48 billion) and service improvements (estimated at US$194.7 million). The largest shares of needs are in the Khersonska (12.75 percent), Kharkivska (9.3 percent), and Luhanska (7.79 percent) regions.

The GoU has made significant efforts to address the sector's needs. Between 2022 and 2024, NPU procured 3,664 vehicles, including passenger cars, trucks, cargo-passenger vehicles, buses, and minibuses, with a total value of UAH 4,271.08 million (US$101.6 million). During the same period, the SESU procured 700 units of equipment, including firefighting and rescue vehicles, automotive/engineering vehicles, emergency rescue vehicles, and pyrotechnic machines, with a total value of UAH 13.5 million (US$321.46).

International assistance provided further firefighting and automotive vehicles as well as other items and equipment as part of humanitarian support. The EU Emergency Response Coordination Centre (ERCC) initiated two rescEU mobilizations to support winter preparations and address the needs of displaced people by delivering small- and large-capacity generators, medical equipment, hygiene kits, and foldable beds. The UCPM has delivered millions of CBRN items, including antidotes, detectors, therapeutics, dosimeters, respirators, decontamination provisions, protective suits, and gas masks. (More detail on the EU's humanitarian aid contribution is in the introduction to this report.) As the assistance is not monetized, these contributions have not been deducted from the overall needs total.

The United Nations Development Programme (UNDP) has also been supporting this sector (see the introduction for more detail). It has supported capacity development for SESU and NPU, as well as technical assistance and capacity development through grants to local NGOs. In addition, It has provided advanced equipment (such as vans for the NPU, quadrocopters, crime scene kits) and operational equipment (such as IT equipment and personal protective equipment). UNDP has also facilitated training programs and technical assistance to strengthen local institutions' capacity to manage disaster risks and effectively respond to emergencies.

Recovery and reconstruction planning and investments within this sector need to address the following considerations. First, in parallel with prioritizing procurement of sector-specific vehicles—including firefighting and specialized vehicles for CBRN—SESU should consider the needs for specialized buildings for operational forces (estimated at US$903 million). These include training centers, logistic hubs,

platforms, hangars for helicopters, emergency call ("112") centers,[382] and shelters in civil protection facilities. Second, investments should consider build back better (BBB) principles by incorporating green, resilient, and inclusive recovery principles and by increasing institutional capacities. Third, reconstruction efforts should be linked to multi-hazard considerations to enhance the overall resilience of critical sector infrastructure. Fourth, because emergency services continue to be provided in the vicinity of combat areas, there is a potential risk of additional damage to infrastructure, vehicles, and equipment. Fifth, short-term planning should consider that market limitations have inhibited the procurement of and access to specialized vehicles and technical equipment.

Limitations and Recommendations for Future Assessments

This assessment follows the same principles as previous RDNAs. Damage calculations used the NPU approach and unit costs, based on actual data from the experience of reconstruction in the sector. Needs were calculated by taking damage data from the field provided by SESU and the NPU (divided by asset type, level of damage, and oblast), and then applying a BBB coefficient and reconstruction unit costs to cover energy efficiency measures, additional security features, disaster resilience, needs for furniture and basic equipment, and inflation. The needs calculations used the SESU methodology and unit costs. This approach ensures alignment with actual data and market values, while considering factors like BBB principles, as noted above. There continue to be some data limitations, including from areas temporarily not under government control or related to the stock or flow of equipment.

Table 37. Emergency response and civil protection: Damage, loss, and needs by oblast (US$ million)

Region	Damage	Loss	Total needs
Cherkaska	0.1	14.2	3.8
Chernihivska	22.2	11.5	151.5
Chernivetska	0.0	13.4	1.9
Dnipropetrovska	15.5	19.9	63.8
Donetska	32.4	25.8	151.1
Ivano-Frankivska	0.0	11.6	6.4
Kharkivska	50.7	31.2	223.8
Khersonska	90.9	18.8	305.4
Khmelnytska	5.7	11.9	30.2
Kirovohradska	0.0	12.0	1.9
Kyiv (City)	4.3	47.2	23.6
Kyivska	27.7	23.0	67.3
Luhanska	57.1	17.4	186.8
Lvivska	0.8	34.0	4.9
Mykolaivska	6.4	14.4	62.5
Odeska	2.1	13.7	20.6
Poltavska	0.5	17.4	4.1
Rivnenska	0.0	11.8	2.8
Sumska	5.1	15.9	28.0
Ternopilska	0.0	10.4	1.7

[382] Under the Ukraine Plan, reforms are planned for the digitalization of public services, which will provide stable communication for emergency services throughout the country and create the MCC, a confidential communication system for use by emergency responders. See Ukraine Facility, "Ukraine Plan 2024–2027," Link.

Vinnytska	0.0	27.1	1.8
Volynska	0.4	34.0	1.9
Zakarpatska	0.1	30.0	2.4
Zaporizka	19.1	15.8	158.0
Zhytomyrska	0.5	12.6	6.1
Nationwide (no specific region)	24.2	0.7	883.8
Total	**366.0**	**495.8**	**2,395.9**

Source: Assessment team. *Note*: Damage covers 34 months between February 24, 2022, and December 31, 2024. Loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2026. Needs cover 10 years between 2025 up to 2035.

Table 38. Emergency response and civil protection: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction needs	Buildings	903.0
Service delivery restoration needs	Vehicles/Equipment	1,322.9
	Service Improvement	147.5
	Debris removal	22.4
Total		**2,395.9**
Total needs met		**477.8**

Source: Assessment team. *Note*: Needs cover 10 years from 2025 up to 2035, as of December 31, 2024.

Justice and Public Administration

Context

The invasion has severely affected the country's public sector, disrupting essential services and inflicting widespread damage across all levels of government.[383] This chapter of RDNA4 expands the scope beyond the four justice-related institutions—State Judicial Administration, Prosecution Service, Ministry of Justice, and State Customs Service—that were the focus of previous assessments. The baseline assessment now includes government office buildings across 113 institutions with data from the RDDP.[384] It also includes data on workplace losses, including unpaid overtime and unpaid compensation for civil servants working on the front line. Damages to office buildings, penitentiary facilities, probation buildings, along with furniture, equipment, and vehicles amount to over US$433 million. Losses, exceed US$2.8 billion, including demolition costs, debris removal, and the workforce impacts. Recovery and reconstruction needs total US$917 million. The inclusion of data on government office buildings, along with workplace losses, has contributed to higher reported damage, losses, and needs compared to RDNA3. Despite ongoing efforts, the invasion has caused a severe shortage of civil servants, with reports indicating significant understaffing at both state and local levels, impacting service delivery. Nearly 66 percent of workplaces at the national level report critical staff shortages, placing unsustainable workloads on remaining staff.[385] While some needs have been met through donor support, the scale of damage and loss underscores the critical importance of targeted recovery efforts to address both immediate and long-term requirements.

Damage and Loss Assessment

Damage to public administration and justice infrastructure is estimated to be of US$433 million, reflecting a 26 percent increase from the US$343.6 million reported in RDNA3 (Table 39). Damages comprise two categories: (i) office buildings, including a wide range of structures used by state and local government bodies for administrative purposes; and (ii) and buildings used by the courts, penitentiary and probation services. RDNA4 demonstrates extensive impacts on Ukraine's public infrastructure. 49 percent of the value of damage relates to partially damaged infrastructure, of which US$97 million office buildings and US$116 million penitentiary and probation facilities. Fully destroyed buildings represent a further 31 percent, of which US$98 million are office buildings and US$35 million are penitentiary and probation facilities. Damage of facilities, furniture, equipment, and inventories, amounts to US$76 million (18 percent of total damage). Damage is concentrated in Ukraine's eastern regions, closest to the frontlines. Kharkivska leads with 27 percent of total damage followed by Luhanska at 13 percent, Donetska at 12 percent, Khersonska at 11 percent, and Zaporizka at eight percent.

The financial toll on the public sector continues to deepen, with total losses estimated at US$2.8 billion—a substantial increase from the US$1.66 billion reported in RDNA3. These losses underscore the sustained impact of disrupted economic activity and damaged institutional operations. Of the total,

[383] The GoU includes the following levels: (i) central government, including national institutions such as ministries and state agencies; (ii) regional government (oblasts), each with a regional state administration and council; (iii) subregional government (raions), subdivisions of oblasts with their own administrations and councils; and (iv) local self-government, which includes city councils, village and settlement councils, and amalgamated territorial communities (hromadas).
[384] The use of these data avoids double-counting from other sectors.
[385] Razumkov Centre, *Labour Resources for Ukraine's Post-War Recovery: Current State, Problems, Solutions*, 2024, Link.

US$2.29 billion (82.3 percent) stem from the loss of customs revenues. Beyond customs revenue, additional losses reflect the costs of maintaining operations under extraordinary circumstances. Penitentiary and probation facilities recorded US$7.44 million in losses, primarily related to demolition and debris removal. The Ministry of Justice reported US$2.63 million in losses, with US$2.35 million tied to the loss of destructed or damaged assets in enforcement proceedings. The prosecution service reported US$4.63 million in losses, including US$1.2 million for temporary rental of premises and US$1.6 million for demolition and debris removal. The State Judicial Administration reported US$6.8 million in losses, largely related to demolition and debris removal. These figures capture only financial losses, excluding the indirect costs of diminished institutional capacity and disrupted services.

The workforce impact, estimated at US$473 million, is shared across all public sector agencies, reflecting the severe strain caused by increased workloads and staff shortages. This total includes US$339 million in losses related to unpaid overtime of civil servants and US$133 million in unpaid compensation for civil servants operating in active or potential zones with fighting.[386] Approximately nine percent of staff were furloughed in 2022, decreasing to one percent in 2023 and 0.2 percent in 2024. Furlough costs are estimated based on the redistributed responsibilities from vacant positions among the current staff, applying the average monthly base salary rate for the bodies experiencing understaffing compared to 2021. Those remaining on duty have often worked overtime, including nights, weekends, and holidays, with additional pay mandated under labor laws. 24 percent of staff received overtime in 2024 (37 percent in 2023). Staff in high-risk areas have received salary increases to compensate for the elevated challenges and risks. The state provides additional compensation to conscripted civil servants' families and financial support for those injured or killed. Despite the huge strain on public servants, public institutions have continued to operate and deliver services with limited disruptions.

Recovery and Reconstruction Needs, including Build Back Better

Recovery and reconstruction needs for the justice and public administration sector over the next 10 years are estimated at US$918 million (Table 40). These comprise US$268 million (29 percent of US$918 million) for the State Judicial Administration, US$98 million (11 percent) for the Prosecution Service, US$10.4 million (one percent) for the Ministry of Justice, US$369 million (40 percent) for Penitentiary and Probation facilities, and US$158 million (17 percent) for the State Customs Service (Table 40). The infrastructure-related needs for the State Judicial Administration, Prosecution Service, Ministry of Justice, and Customs are primarily for new construction or repairs, the acquisition of vehicles, furniture, equipment, and other inventory. For Penitentiary and Probation facilities, the largest needs are the construction of new facilities to replace those destroyed or severely damaged during the invasion. Geographically, needs are concentrated in eastern part of Ukraine, where the impact has been most severe. Kharkivska accounts for 24 percent of total needs), followed by Donetska for 12 percent, Luhanska for 10 percent, and Khersonska for 9 percent.

Needs met. While funding has been allocated to penitentiary and probation-related projects, the broader needs of the public administration and justice sector have been addressed only partially. In the 2025

[386] Losses to staff operations were calculated based on furloughs, overtime, and salary adjustments in fighting zones. Furloughs affected 9 percent of civil servants in 2022, 1 percent in 2023, and 0.2 percent in 2024, with overload costs reflecting the increased burden on remaining staff.

budget, two projects addressing infrastructure needs received state funding: the reconstruction of the premises of the non-residential building of the Ministry of Health and Welfare at the Kyiv Investigative Detention Center, with an allocation of US$1.8 million and the reconstruction of a complex of buildings to create a detention center in Martusivka, Boryspil district, with an allocation of US$6.4 million. The public administration and justice sector are critically underfunded relative to its identified needs.

Limitations and Recommendations for Future Assessments

The expanded scope of the assessment of damage and losses to encompass the public administration marks a major advancement. The RDNA4 includes data on the damage and losses for both the public administration and the justice sector, encompassing 113 state institutions across all levels of government. This draws on baseline data from the State Property Fund of Ukraine (SPFU) and data listed in the RDDP, validated with ministry information. Going forward, a more comprehensive cross-check of data across all 113 institutions is needed to enhance the accuracy of future assessments.

Workforce impact require better data. The integration of human capital losses into this assessment highlights the financial and operational impacts on civil servants. However, estimates are based on data provided by the National Agency for Civil Service (NACS) and the four core justice-related agencies adjusted with coefficients to quantify impacts. While these assumptions were informed by robust data, they underscore the need for more granular and consistent records moving forward.

Data access remains a persistent challenge. As previous RDNAs, data limitations remain a significant challenge. The lack of access to data on assets in territories temporarily not under GoU control hinders the ability to fully assess damage and determine future recovery needs**.**

Key improvements are recommended for future assessments. The following recommendations are proposed to enhance the accuracy and efficiency of future assessments: (i) engage the State Property Fund of Ukraine to establish a comprehensive baseline of public sector assets; (ii) work with NACS to standardize reporting on human capital losses; (iii) involve all levels of GoU in data collection efforts to ensure a more holistic and accurate understanding of public administration damage, losses, and needs; and (iv) ensure agencies enter information on damage assets into the RDDP when this damage occurs.

Table 39. Justice and public administration: Damage, loss, and needs by oblast (US$ million)

Oblast	Damage	Loss	Needs
Cherkaska	-	0.9	0.6
Chernihivska	15.9	27.6	31.3
Chernivetska	-	0.5	0.4
Dnipropetrovska	12.1	s.9	47.6
Donetska	52.3	178.0	141.9
Ivano-Frankivska	0.7	1.1	0.5
Kharkivska	121.2	52.8	255.1
Khersonska	46.9	275.9	52.4
Khmelnytska	1.2	0.6	5.6
Kirovohradska	-	0.6	0.5
Kyiv (City)	17.5	1,381.8	73.1
Kyivska	26.6	5.1	18.7
Luhanska	55.6	74.1	144.9

Lvivska	4.9	1.3	4.7
Mykolaivska	14.2	24.9	43.5
Odeska	5.1	130.3	21.6
Poltavska	3.9	0.6	2.3
Rivnenska	-	0.7	0.5
Sumska	10.2	111.6	29.3
Ternopilska	-	0.3	0.5
Vinnytska	0.6	1.5	3.2
Volynska	-	0.7	0.4
Zakarpatska	-	1.4	0.5
Zaporizka	37.3	143.6	19.9
Zhytomyrska	3.5	73.8	11.3
Nationwide (no specific region)	3.4	301.8	7.5
Total	**433.2**	**2,796.6**	**917.9**

Source: Assessment team. *Note*: - = not assessed. Damage covers 34 months between February 24, 2022, and December 31, 2024; loss covers a total of 52 months, which includes 34 months between February 24, 2022, and December 31, 2024, and an additional 18 months until June 30, 2025; needs cover 10 years between 2025 and 2035.

Table 40. Justice and public administration: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Reconstruction Needs	Judiciary	268.1
	Ministry of Justice	379.4
	Prosecution	98.0
	Customs	158
Service Delivery Recovery Needs	Judiciary	-
	Ministry of Justice	8.3
	Prosecution	6.3
	Customs	-
Total		**917.9**
Total needs met		**8.2**

Source: Assessment team. *Note*: needs cover 10 years from 2025 up to 2035, as of December 31, 2024.

Explosive Hazards Management[387]

Context

The scale of contamination by explosive remnants of war (ERW) and landmines in Ukraine is one of the largest in the world since World War II: 138,503 km² of land and 14,000 km² of water were at risk of contamination and in need of survey as of December 2024. This is a decrease from 174,000 km² in 2023 due to reduction, cancellation, and clearance efforts over the 12 months since the RDNA3.[388] This unprecedented contamination by landmines has inflicted severe economic, environmental, and social costs, with far-reaching consequences for the country's recovery and development. The impact of landmine contamination is profound and multifaceted. Mines continue to pose a direct threat to human safety, causing casualties and long-term suffering. As of November 2024, an estimated 1,094[389] civilian casualties were recorded due to landmines and other ERW.[390] This includes 774 people, including 88 children, who were injured, and 320 people, including 16 children, who died.[391] Some 6.1 million citizens are under threat of ERW, and an estimated 9,000 accidents may occur by 2030 due to landmines and other ERW.

Significant progress has been made in the past years in addressing the scale of contamination; further details are provided below. Notably, in 2024, the GoU developed and adopted the National Mine Action Strategy for the period to 2033 and the corresponding Operational Plan for 2024–2026.[392] The strategy outlines three strategic objectives. The first is Returning Land to Safe and Productive Use, by expanding cleared areas to support agriculture, infrastructure development, and economic activities; fostering the development of a robust mine action services market; ensuring adequate human resource capacity in mine action; and integrating innovations and advanced technologies into operations. The second is Reducing the Impact of Explosive Hazards on the Lives and Well-being of the Population, by enhancing safety through coordinated risk education programs, ensuring adequate and accessible social protection for individuals affected by explosive ordnance (EO), and mitigating the environmental impact of mine contamination. The third is Strengthening the National Mine Action Management System, by enhancing institutional frameworks and operational capacities to support sustained and scalable mine action operations, including the development of an effective task prioritization system, improved coordination of activities at the local level, unified information management, and streamlined donor coordination.

Damage and Loss Assessment

Human impact: People's lives have been profoundly altered by the physical, psychological, and socioeconomic impacts of explosive incidents. The injuries caused by EO often result in severe physical impairments, leaving survivors with lifelong disabilities. Beyond the physical impact, the psychological trauma is significant, with many survivors and their families experiencing post-traumatic stress disorder (PTSD), depression, and anxiety. The intangible costs of EO contamination extend beyond individual

[387] In RDNA1, this sectoral assessment was labeled "Land Decontamination."
[388] Government of Ukraine, Demine Ukraine, "National Mine Action Platform," Link.
[389] Information Management System for Mine Action (IMSMA) database (accessed December 25, 2024), Link.
[390] OHCHR, "Ukraine: Protection of Civilians in Armed Conflict: December 2024 Update," Link.
[391] IMSMA database (accessed December 25, 2024), Link.
[392] "National Mine Action Strategy for the Period up to 2033 and the Operational Plan for Its Implementation for 2024–2026 Adopted by the Cabinet of Ministers of Ukraine on June 28, 2024," Link.

injuries. Entire communities are affected, as the fear of EO restricts mobility, access to farmland, and the use of critical infrastructure. This in turn impacts local economies, hinders education, and reduces access to essential services.

Access to livelihood and business activity, and to services: Agricultural land is reported to be the most affected within areas identified as Suspected Hazardous Areas (SHA) or Confirmed Hazardous Areas (CHA).[393] This impact on agricultural land has direct implications for livelihoods and economic activity; it hampers relocation of business activity away from the affected regions and makes land inaccessible for farmers. The Kakhovka Dam break has aggravated issues of access and relocation due to the large area of agricultural land that was flooded combined with the spread of landmines and ERW.

Economic hardship: Landmines and ERW are estimated to reduce regional tax revenues by US$1.1 billion annually, representing 9.2 percent of Ukraine's total regional tax revenues in 2021.[394] In the Kharkivska region, for instance, cultivated land decreased by 42 percent compared to 2021, and the volume of agricultural production decreased by 52 percent—i.e., by 4,100 tons.[395] These impacts, along with the disruption in other regions, have exacerbated economic hardship and contributed to an estimated US$11.2 billion loss in GDP, according to recent studies.[396]

Long-term financial burden: The extensive scale of required demining poses a significant financial challenge, and the costs of humanitarian mine action in Ukraine remain among the highest globally. While Ukraine has seen significant funding increases in the mine action sector in response to the ongoing humanitarian crisis, long-term funding fluctuations are anticipated due to competing global challenges.[397]

Environmental degradation: The contamination of agricultural and natural landscapes has had a detrimental effect on ecosystems, compounding the challenge of restoring these areas for productive use. Mining has impacted the Black Sea Biosphere Reserve and national parks across Ukraine, including along the frontline areas, such as Velykyi Luh, Nyzhn'odniprovs'kyy, Biloberezhia Sviatoslava, Kamianska Sich, Kreminski Lisy, and Dvorichansky. It has also affected coastal parks in areas temporarily not under government control, such as Dzharylhats'kyy, Charivna Gavan, and the Krymskiy Nature Reserve.[398]

Recovery and Reconstruction Needs, including Build Back Better

The total costs for clearance are estimated at US$29.8 billion, which reflects progress in survey and clearance operations, improved methodologies, and prioritization strategies.[399] The current estimate is US$4.8 less than the estimate in RDNA3 (US$34.6 billion) thanks to progress in land cancellation and

[393] IMSMA database (accessed December 25, 2024).
[394] Tony Blair Institute for Global Change, "From Economic Recovery to Global Food Security: The Urgent Need to Demine Ukraine," September 10, 2024, Link.
[395] Ukrainian Researchers Society, "Assessment of Agricultural Losses Due to Soil Loss as a Result of Military Operations," Link.
[396] Tony Blair Institute for Global Change, "From Economic Recovery to Global Food Security: The Urgent Need to Demine Ukraine," September 10, 2024, Link.
[397] GICHD, "Innovative Finance for Mine Action: Needs and Potential Solutions," Link.
[398] Ukraine War Environmental Consequences Work Group, "Danger! Mines! The Terrible Environmental and Human Cost of Ukraine's Minefields," November 18, 2024, Link.
[399] Building on the data collected and land release efforts of 2023, RDNA4 projects updated costs and strategies for addressing explosive ordnance contamination in Ukraine.

reduction. Updated estimates, including nontechnical survey (NTS), technical survey (TS), and clearance operations, are provided in Table 41. Ongoing efforts focus on conducting 100 percent of primary NTS work, canceling suspected areas without evidence of contamination, enabling the release of large areas of land for productive use, and refining the identification of heavily contaminated areas requiring advanced clearance. High contamination levels in oblasts such as Khersonska, Luhanska, and Donetska necessitate significant financial resources, underscoring the scale of the challenge.

Since 2023, significant progress has been made in addressing the scale of contamination:

- The affected area requiring survey was reduced from 174,000 km² to 138,503 km², reflecting substantial progress in NTS and initial land release efforts.
- Land amounting to 35,496 km² has been cleared, reduced, or canceled, allowing its return to productive use.[400]
- Agricultural land amounting to 5,121.23 km² was slated for examination and clearance in 2024, of which 3,152.52 km² was surveyed and 2,507.8 km² was cleared in Khersonska, Kharkivska, Mykolaivska, Kyivska, Chernihivska, Dnipropetrovska, and Donetska regions.
- The number of certified mine action operators increased from 6 to 68, demonstrating a rapid scaling of operational capacity.
- Since 2022, field mine operations have been enhanced by the deployment of 151 demining machines, 58 heavy vehicles, 375 light vehicles, 23 explosive ordnance disposal robots, 32 aerial drones, more than 3,300 metal detectors, and more than 5,700 items of personal protective and other equipment.
- In 2024, the state-funded program for compensating costs for humanitarian demining of agricultural lands was launched, implemented by the Center for Humanitarian Demining. Under the program, certified mine action operators apply to clear agricultural lands through open auctions. The program has held 50 auctions through the public procurement ProZorro system covering almost 10,000 ha of agricultural lands. The value of the contracts with mine action operators amounts to about UAH 537 million (US$12.8 million). The launch of the center is an important development complementing the existing mine action architecture. The center is a budgetary institution subordinated to the Secretariat of the Cabinet of Ministers of Ukraine and acts as an implementing institution. The center supports and strengthens information management, digitalization, implementation of the state-funded compensation program and support international cooperation.
- Mine action operators in the private sector or within NGOs have helped reduce SHA and identified CHA equal to 546 km^2; 326,137 people are direct or indirect beneficiaries of these efforts.[401]
- The EU and its Member States have provided over €320 million to support humanitarian demining in Ukraine, including €80 million from the EU between 2022 and 2024 via the Service for Foreign Policy Instruments and European Civil Protection and Humanitarian Aid Operations. This includes the provision of significant demining equipment and national and international expertise for

[400] IMSMA database (accessed December 25, 2024). See also Ministry of Economy of Ukraine, "Since 2022, We Have Reduced the Area of Territories Dangerous to People by 35 km^2—Yuliia Svyrydenko at the Opening of UMAC 2024," October 17, 2024, Link.
[401] This figure is an estimate based on population figures prior to February 2022 from Humanitarian Data Exchange, Common Operational Dataset (accessed December 14, 2024).

demining to Ukraine's mine action authorities and state operators, as well as support to demining NGOs, with additional €7.8 million in equipment donations from 11 EU Member States through the UCPM.

Ensuring the safe and productive use of territories contaminated by explosive ordnance is the first of three strategic goals outlined in Ukraine's National Mine Action Strategy, as noted above.[402] To achieve this goal, capacities of authorities should continue to be build including through the following activities:

- *Training and recruitment:* Developing a robust pipeline of skilled deminers and trainers to meet growing operational demand; recruiting and training additional well-equipped deminers, including engaging war veterans, women, people with disabilities in the mine action sector and providing opportunities for professional development.
- *Equipment and life-cycle support:* Acquiring and maintaining advanced demining tools to enhance operational sustainability.
- *Information management and prioritization*: Developing the state register of SHA or CHA and implementing a mine action task prioritization system with comprehensive criteria, considering social, economic (including agriculture and forestry), environmental, and other factors.
- *Certification procedures:* Establishing streamlined processes to improve high-quality and risk-managed demining operations.
- *Quality management:* Undertaking quality assurance to accredit and monitor survey and clearance organizations, and quality control to rigorously inspect and validate the outputs of land release; expanding the existing capacities of the mine action quality management system (including the external monitoring capabilities), which will enable it to speed up the land.
- *Governance***:** To enhance efficiency and effectiveness, improve the governance and coordination in Ukraine's mine action sector on all levels, using tools and approaches such as digitalization, accountability, measurement of performance, monitoring and analysis, clear definition of responsibilities and business processes, and others.
- *Funding***:** Improving funding for Ukraine's mine action sector in terms of its volume, diversity and sustainability of its sources, and efficiency and effectiveness of its use, including by: (i) Expanding the compensation program administered by the Center for Humanitarian Demining to community lands, forests, and other areas with both budgetary and donor funding, thereby fostering development of a demining services market, stimulating private initiative, and developing local mine action capacity in the long term; (ii) Designing and implementing innovative financing approaches such as front-loading for the mine action sector; and (iii) Developing and launching blended financing instruments involving the private sector, such as sustainable bonds and PPPs.
- *Community engagement through community liaison teams***:** Continuing collaboration with affected populations to collect localized reports of EO and improve the accuracy of survey data.

[402] "National Mine Action Strategy for the Period up to 2033 and the Operational Plan for Its Implementation for 2024–2026 Adopted by the Cabinet of Ministers of Ukraine on June 28, 2024," Link.

- *Explosive Ordnance Risk Education (EORE):* Expanding programs to educate communities on risks and promote behavioral change to mitigate risks.[403]

Key recommendations for recovery include the following, with further information provided below.

1. **Prioritize high-impact areas:** Focus resources on densely populated zones, vulnerable communities, and economically critical regions.
2. **Expand capacity building:** Develop sustainable programs to recruit and train skilled personnel, supported by investments in durable equipment and maintenance systems.
3. **Leverage technology:** Integrate aerial and remote sensing technologies and artificial intelligence to accelerate survey processes and optimize land release.
4. **Support national mine action actors:** Ensure access to funding opportunities and establish cooperation with the national mine action operators (private and nongovernmental) to utilize the full capacity of the mine action sector.
5. **Foster international partnerships:** Enhance cooperation with international mine action organizations for expertise, funding, and technology transfer.

Geographic and sectoral prioritization*:* The focus of clearance efforts continues to be on southern and eastern regions (Khersonska, Mykolaivska, Kharkivska, and Dnipropetrovska) and on northern regions (Sumska, Chernihivska, and Kyivska). These areas are the most contaminated and house the majority of EO victims. Targeted clearance in residential zones is critical to enable the return of displaced populations, the revitalization of communities, and the recovery of local economies. Further prioritization should consider (i) population centers and vulnerable groups, in order to enhance the safety of large urban areas and support small-scale farmers; and (ii) Critical infrastructure**,** such as transportation networks, energy infrastructure, and agricultural supply chains, in order to promote economic recovery.

Technological innovations to reduce costs: Advanced technologies, including aerial surveys, remote sensing, and machine learning, have the potential to expedite surveys, reducing overall costs while improving accuracy. Investments in technology must be integrated to bolster the efforts of highly trained deminers on the ground and enhance the speed and cost-effectiveness of clearance operations.

Automated prioritization system: A unified and sustainable system for establishing priority demining standards for each unit of affected territory is needed and should be implemented in three phases. First, pilot a project in Kharkivska region to test the logic and methodology of the proposed prioritization approach, and to identify and eliminate potential inconsistencies in implementation. Second, extend the approach to all territories of Ukraine affected by hostilities. Using the data and methodology from the pilot phase, scale up the system to all affected regions of Ukraine, taking differences between regions into account and ensuring the integrity of the approach at the national level. Third, build Ukraine's capacity to

[403] Capacity-building and development needs for the mine action sector are identified in the National Mine Action Strategy until 2033 and include mine actions market development, integration of innovations and advanced technologies, human resource development, EORE programs, victim assistance and social protection, environmental aspects, an effective task prioritization system, and information management. The recovery and reconstruction needs related to mine action sector capacity development are short- and medium-term solutions and are not covered by the scope of the Single Project Pipeline for 2025.

create large-scale information projects. Integrate the system into national strategies and programs to promote sustainable development and effective management of the demining process.

Addressing human impacts: There is a need to focus on victims, IDPs, and provision of EORE, as also noted in the human impact assessment chapter of the RDNA4.

Victim assistance programs are a vital component of Ukraine's mine action efforts to restore a sense of normalcy for survivors while promoting their inclusion and participation in community life. Ukraine should expand the capacity for medical and psychological services, foster partnerships with international organizations, and incorporate technological solutions. The scale of human suffering underscores the urgency of continued and expanded support to address the full scope of EO's impact on lives and livelihoods. Key areas of ongoing support include medical rehabilitation, i.e., immediate and long-term medical care, including surgery, prosthetics, and physiotherapy, to help victims regain mobility and independence; psychosocial support, i.e., counseling and mental health services to address trauma and support emotional recovery for survivors and their families; economic reintegration/vocational support, i.e., training programs and employment opportunities to empower survivors and reduce economic dependency; and community-based support, i.e., establishment of networks to enhance victims' resources and local support systems.

Displaced populations: The presence of EO in residential areas has been a significant barrier to the return of IDPs. Concerns about safety keep many families away from their homes, prolonging displacement and creating additional social and economic pressures. Clearance of these areas is critical not only to reduce injuries but also to enable communities to rebuild and thrive.

Explosive Ordnance Risk Education (EORE) remains an acute need in contaminated areas but is also important in regions with large numbers of IDPs, who could become returnees at any time. In 2024, EORE activities conducted by certified operators reached almost 856,000 people.[404] The operators have focused on Kharkivska, Mykolaivska, Dnipropetrovska, Chernihivska, and Sumska oblasts. Since February 2022, over 1.5 million people have been reached with EORE sessions, online learning, and mass media campaigns and distribution of EORE materials. EORE should target adult men in its messaging, as they are the most common EO causalities; according to the mine and ERW accidents data in the Information Management System for Mine Action, 81 percent of those injured and 87 percent of those killed are men. Data from EORE sessions show that EORE messages have a wide reach throughout the country and that people have a high level of awareness of these messages. Future EORE programs should teach people to adopt safe behavior to leverage social and behavioral change.

Limitations and Recommendations for Future Assessments

Humanitarian mine action costs remain consistent with earlier findings: estimated costs for clearance operations are US$3 million per km²; for TS they are US$750,000 per km²; and for NTS they are US$1,210 per km². The operational costs outlined in RDNA4 reflect an updated and phased approach to addressing explosive contamination in Ukraine, incorporating both terrestrial and aquatic settings.

[404] Mine Action Area of Responsibility, "Ukraine 5W Dashboard–2024 Response," Link.

Accurately estimating EO-related costs and risks remains difficult due to the evolving nature of the contamination and ongoing events. Operational efforts continue to rely on a phased land release approach. Emergency clearance, led by the SESU and Ministry of Defense units, remains focused on "spot tasks" involving EO disposal, followed by systematic clearance in accordance with International Mine Action Standards (IMAS). While this methodology has proven effective in stabilizing high-priority areas, the vast scope of contamination poses long-term challenges and requires sustained coordination and investment.

A more accurate methodology for arriving at pricing information, one based on mine action sector development, could improve future reports. This approach addresses the critical need to develop Ukraine's mine action sector in alignment with the 2025 strategic and operational objectives. It is expected to significantly enhance the precision of calculations for the next RDNA by strengthening the sector's capacity to provide reliable and detailed reporting, which is essential for effective planning and resource mobilization. Specifically, the approach benefits from the following: (i) development of a comprehensive state register of SHA and CHA; (ii) introduction of an automated prioritization system to improve resource allocation and operational planning; (iii) development of a methodology for pricing formation for different types of hazardous areas; and (iv) an extensive data set of auction results based on the program for compensation of costs for humanitarian demining across various types of territories to support robust analysis and informed decision-making.

To address aquatic clearance challenges, there is a critical need to differentiate between terrestrial and underwater clearance. The lack of tailored cost estimation for aquatic operations complicates budgetary planning, especially given the destruction of the Kakhovka Dam and its environmental and safety repercussions. Flooding in the region has displaced or submerged mines and ERW, significantly increasing the risk of injuries and fatalities. Moreover, clearance activities risk harming fragile ecosystems in river deltas, underscoring the need for environmentally sensitive demining methodologies.

In the south and east of Ukraine, where active fighting persists, and some territories are temporarily not under GoU control, access and security constraints make humanitarian mine action infeasible. These regions, adjacent to the frontline, are among the most heavily contaminated and are at continued risk of recontamination due to ongoing fighting. Because comprehensive surveys are not currently possible in these areas, critical gaps will remain in understanding of the scale of contamination.

Ukraine faces a decades-long demining effort that will extend well beyond 10 years. This highlights the importance of building long-term institutional capacity, strengthening partnerships with international mine action organizations, and integrating innovative technologies to enhance efficiency. Without such investments, the residual risks to communities and the associated economic impact will persist.

Future assessments should incorporate these considerations to provide more robust, actionable insights for Ukraine's ongoing recovery and demining initiatives:

- *Differentiation of costs:* Develop separate cost estimates for terrestrial and aquatic clearance operations to ensure better budget allocation and planning.

- *Environmental considerations:* Integrate environmentally sensitive demining methodologies to minimize damage to ecosystems, particularly in fragile river deltas.
- *Affected areas:* Establish contingency plans for survey and clearance operations in territories currently inaccessible, preparing for post-war access.
- *Technological innovations:* Expand the use of technology such as satellite imagery, unmanned systems, and artificial intelligence to improve survey efficiency and operational risk management.
- *Long-term investment:* Secure sustained funding and capacity-building programs to manage the long-term nature of clearance efforts effectively.

Table 41. Suspected Hazardous Areas by oblast and estimated cost for land release activities (US$ million)

Oblast	Area of oblast (km²)	Suspected contaminated area (km²)			Estimated cost for HMA			
		NTS	TS	Clearance	NTS	TS	Clearance	Total
Cherkaska	20,900	0	0	0	0			**0.0**
Chernihivska	31,865	20,664	620	310	25	464.95	929.9	**1,419.8**
Chernivetska	8,097	0	0	0	0	0.0	0	**0.0**
Dnipropetrovska	31,974	0	0	0	0	0.0	0	**0.0**
Donetska	26,517	13,757	1,376	1,032	16.6	1,031.84	3,095	**4,143.7**
Ivano-Frankivska	13,928	0	0	0	0	0.0	0	**0.0**
Kharkivska	31,415	11,414	856	642	13.8	642. .5	1,926.1	**2,582**
Khersonska	28,461	21,956	2,196	1,647	26,566.3	1,646.7.5	4,940.	**6,613.2**
Khmelnytska	20,645	0	0	0	0	0.0	0	**0.0**
Kirovohradska	24,588	0	0	0	0	0.0	0	**0.0**
Kyiv (City)	835	0	0	0	0	0	0	**0**
Kyivska	28,131	8,437	253	127	10.2	189.8.8	379,669.6	**579.7**
Luhanska	26,684	26,673	2,667	2,000	32.3	2,000.5.0	6,001.4	**8,034.2**
Lvivska	21,833	0	0	0	0	0.0	0	**0.0**
Mykolaivska	24,598	2,390	72	36	2.9	53.8	107.6	**164.2**
Odeska	33,310	0	0	0	0	0.0	0	**0.0**
Poltavska	28,748	0	0	0	0	0.0	0	**0.0**
Rivnenska	20,047	0	0	0	0	0.0	0	**0.0**
Sumska	23,834	13,524	406	203	16.4	304.3	608.6	**929.2**
Ternopilska	13,823	0	0	0	0	0.0	0	**0.0**
Vinnytska	26,513	0	0	0	0	0.0	0	**0.0**
Volynska	20,144	0	0	0	0	0.0	0	**0.0**
Zakarpatska	12,777	0	0	0	0	0.0	0	**0.0**
Zaporizka	27,180	16,304	1,549	1,162	19.7	1,161.7	3,485	**4,666.4**
Zhytomyrska	29,832	3,385	152	76	4.1.7	114.2	228.5	**346.8**
Nation-wide priorities								**359.9**
Ukraine		**138,503**	**10,146**	**7,234**	**167.6**	**7,609.7**	**21,702**	**29,839.2**
US$/km²					1,210.0	750,000.0	3,000,000.0	

Source: Estimated NTS cancellation of hazardous area percentages and operational costs: assessment team; oblast area: European Space Agency WorldCover 2020 Land Cover, Link; area exposed to war: National Mine Action Platform, Link. *Note*: For visual representation, see figures below. HMA = humanitarian mine action; NTS = nontechnical survey; TS = technical survey. Total = total loss = total needs (10 years).

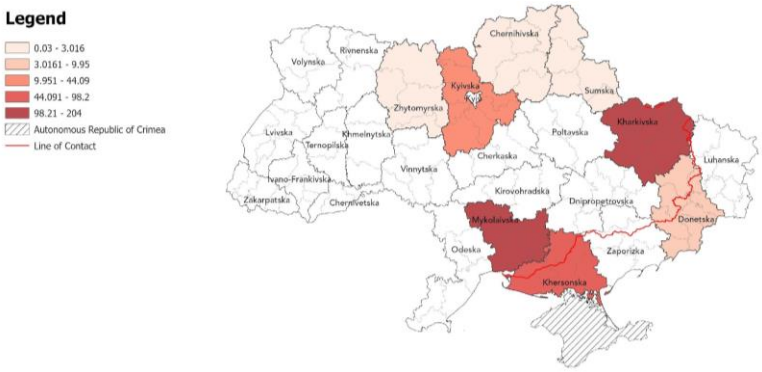
Table 42. Explosive hazards management: Total recovery and reconstruction needs (US$ million)

Category	Types of activities/investments	Total needs (2025–2035)
Service delivery restoration needs	Nontechnical survey	167.6
	Technical survey	7,609
	Mine clearance	21,702
	Need for MoD State Special Transport Service	89.034

Governmental entities capacity building needs	Need for SESU and National Police of Ukraine	204.49
	Needs for MoE (Center for humanitarian demining, Needs, reducing impact of the EO on population)	66.4
Total		**29,839.2**

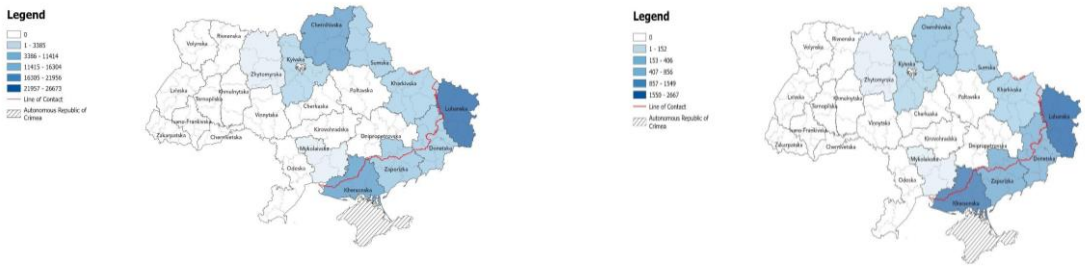
Source: Assessment team. *Note*: needs cover 10 years from 2025 up to 2035 as of December 31, 2024. This table highlights urgent needs for mine action sector capacity development in Ukraine as identified in the National Mine Action Strategy, which are not yet covered by the SPP for 2025.

Figure 34. Suspected Hazard Areas and Confirmed Hazard Areas assessed by private and nongovernmental operations (km^2)



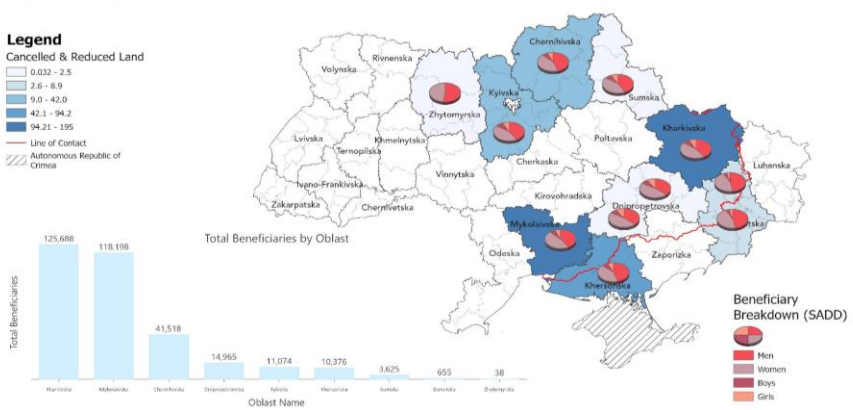
Source: Information Management System for Mine Action (IMSMA) database (accessed December 14, 2024).

Figure *35*. NTS (left) and TS (right) calculations(km2)



Source: IMSMA database (accessed December 14, 2024).

Figure 36. Land canceled, reduced, or identified as contaminated by private or nongovernmental operators (km2)



Source: IMSMA database (accessed December 14, 2024). *Note*: SADD = sex and age disaggregation.

Annex 1. RDNA4 Team

The RDNA4 team would like to express its deep appreciation to all individuals and organizations who contributed to this assessment (listed below and in Table 43).

From the Government of Ukraine, support was provided under the guidance of Oleksii Kuleba, Deputy Prime Minister for Restoration - Minister for Development of Communities and Territories of Ukraine; Aliona Shkrum, First Deputy Minister for Development of Communities and Territories of Ukraine, Nataliia Kozlovska, Deputy Minister for Development of Communities and Territories of Ukraine, Maryna Denysiuk, Deputy Minister for Development of Communities and Territories of Ukraine; and Olga Zykova, Deputy Minister for Ministry of Finance of Ukraine, with support from the ProSteer Office under the MDCT, and the Reforms Delivery Office of the Cabinet of Ministers of Ukraine (RDO).

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Table 43. RDNA4 Team

Core level
Government: Aliona Shkrum, Maryna Denysiuk, Natalia Kozlovska, Oleksandr Petroshchuk, Artem Husak, Maiia Yankovska, Roman Fil, Katarina Nalozhytova, Kateryna Morozova, Denys Uliutin, Alina Chernomaz, Oleksiy Zhak, Yaroslav Tashuta, Tetyana Kovtun, Olena Osmolovska, Sobolev Oleksii, Maryna Khlystun, Olena Belska, Yuliia Tiulenieva.
World Bank: Zuzana Stanton-Geddes, Urska Zrinski, Oleksandra Shatyrko, Krunoslav Katic, Tessa Cullen, Jun Rentschler, Soraya Ridanovic, Oleksandr Sheburenkov, Silvia, Malgioglio, Debashree Poddar, Sevara Melibaeva, Nithin Umapathi, Karlis Smits, Nadia Kislova, Julia Samoslied, Ben Stewart, Andres Chamorro, Spyridon Demetriou, Nicole Frost, Amy Lynn Stilwell, Victor Zablotskyi, Zoe Trohanis, Baher El-Hifnawi, Thomas Farole, Oleksandra Novak. From the International Finance Corporation: Antoine Coste, Victoria Tetyora, Johannes Herderschee.
European Commission: Vincent Winterhager, Frederico Mollet, Fatih Aydogan.
United Nations: Rita Missal, Ildar Gazizullin, Aliaksei Vavokhin, Yaroslava Babych, Joana Sampainho.
Macroeconomic Impact, Poverty
Government: Oleksii Sobolev, Mykhailo Kaplun, Marina Khlystun, Vita Bochkivska, Oleksii Zhak.
World Bank: Florian Blum, Anastasia Golovach, Klym Naumenko, Judy Yang, Obert Pimhidzai, Avralt-Od Purevjav, Wondimagegn Mesfin Tesfaye.
European Union: Alkyoni Kollia.
United Nations: Aliaksei Vavokhin, Hana Daoudi, Ildar Gazizullin, Yaroslava Babych, Dene Cairns, Aziz Karimov, Michael Newson.
Human Impact Assessment (social sustainability and inclusion; displacement/fragility, conflict, and violence; and gender)

Government: Marchak Daryna, Borshchenko Tetiana, Farkhadov Farkhad, Nesyn Iryna, Latynskyi Mykhailo, Herasymenko Nataliia, Ivanova Inna, Muzyka Yurii, Boiarkin Mykola, Vovk Natalia.
World Bank: Erik Johnson, Oleksandra Shatyrko, Spyridon Demetriou, Farwah Qasim, Murat Onur, Charlotte Vuyiswa McClain-Nhlapo, Dominik Koehler, Anastasia Bobrova, Yulia Nazarenko.
European Union: Andrea Silipigni, Hanna Oraheimo.
United Nations: Nina Maja Schrepfer, Nynne Warring, Joshua Phillipo-Holmes, Ana Lukatela, Olena Ivanova, Kim Matthis, Noriko Takahashi, Julia Broussard, Sabine Freizer, Yaroslava Babych, Tetyana Kudina, Clara Bastardes Tort, Tetiana Grytsenko, Danielle Scarpassa Do Prado, Kateryna Fishchuk, Theresa Chorbacher, Noushik Etyemezian, Kateryna Yermak, Felicia Dahlquist, Swirri Aboringong, Olha Suprun, Valeriia Taran-Gaiduk, Anastasiia Kolomiiets, Sofiia Kornieieva, María Maslanka Figueroa, Thomas Elter, Iryna Vintoniuk, Larysa Savchuk, Tapiwa Gudza, Yuliia Kvasnevskaya, Petra Wenitzky, Myroslava Mosiiuk, Maria Adelasia Divona.
Housing
Government: Natalia Kozlovska, Oleksandr Petroshchuk, Inna Vakhovych, Igor Korkhovyi, Kateryna Samsonyuk.
World Bank: Debashree Poddar, Pol Nadal, Oleksandr Dovbnia, Tengiz Gogotishvili.
European Union: Vincent Winterhager.
United Nations: Teri Smith, Andri Sphak, Philip Peirce, Thamara Fortes, Arun Narayanan, Gwendoline Mennetrier, Mariana Lessa Voita, Olga Liuta.
Education and Science
Government: Kudriavets Yevhen, Sofiyenko Anastasiia, Kotorobai Yevhen, Suprunenko Lesia, Atamanenko Nataliia, Rumovska Oksana, Koretska Nelia, Dalevska Tetiana, Burda Tetiana, Darmostuk Olena, Yurii Malashenko.
World Bank: Laura S. McDonald, Rafael Ignacio Fernandez Miranda, Enrique Alasino, Yana Konotopenko.
European Union: Federica Colasanti and Adrien Olszak-Olszewski.
United Nations: Emmanuelle Abrioux, Alvaro Fortin, Daniel Cuturic, Nataliia Katashynska, Augustin Plard, Ivan Vynnychenko.
Health
Government: Adamanov Edem, Karanda Vitalii, Hotsuienko Tetiana, Lisovskyi Vadym, Yurii Malashenko.
World Bank: Christophe Rockmore, Akiko Kitamura, Oleksandr Zhynas, Denys Vinnichuk, Jakub Jan Kakietek.
European Union: Rene Steiner, Fernando Fonseca.
United Nations: Kateryna Fishchuk, Anne Laevens, Bohdan Pidverbetskyy, Ayari Honda, Tetiana Slobodian, Thomas Elter,Miguel Vallet, Gabriela Ionascu, Nataliia Salabai, Artem Skrypnyk, Anastasiia Shcherbakova.
Social Protection and Livelihoods
Government: Marchak Daryna, Borshchenko Tetiana, Farkhadov Farkhad, Nesyn Iryna, Latynskyi Mykhailo, Herasymenko Nataliia, Ivanova Inna, Bilak Denys, Yurii Malashenko.
World Bank: Roman Zhukovskyi, Anna Baranova, Iryna Kalachova.
European Union: Federica Colasanti.
United Nations: Paul von Kittlitz, Niamh MC Evoy, Nina Maja Schrepfer, Samira Allahverdiyeva, Michael Newson, Noriko Takahashi, Sergiy Savchuk, David Mosler, Dzemal Hodzic, Nynne Warring.
Culture and Tourism
Government: Bondar Anastasiia, Tryma Diana, Voitseshchuk Nataliia, Yurii Malashenko.
World Bank: Ahmed Eiweida, Jun Rentschler, Oleksandra Shatyrko.
European Union: Tetiana Shulha, Vincent Winterhager, Fernando Fonseca.
United Nations: Chiara Dezzi Bardeschi, Joe Kallas, Maïssa Acheuk-Youcef, Darya Levchenko, Kateryna Davletshyna, Stefanie Grussinger, and Aliaksei Vavokhi.
Agriculture
Government: Oksana Osmachko, Luidmyla Shemelynets, Bahrat Akhidzhanov, Kateryna Nazarenko.
World Bank: Irina Schuman, Oleksandr Muliar, Roman Neyter (KSE).
European Union: Frank Rothaus Jensen, Christian Hell, Frederico Mollet, Vincent Winterhager.
United Nations: Aziz Karimov, Anna Burka, Dragan Angelovski, Kjell Sundin, Aleksa Mirkovic.
Irrigation and Water Resources
Government: Shemelynets Liudmyla, Akhidzhanov Bahrat, Kramarenko Olena, Shymkus Maryna, Olinkevych Iryna, Kateryna Nazarenko, Osmachko Oksana.

World Bank: Ranu Sinha, Femke van Woesik, Frank van Steenbergen, Olga Zhovtonog.
European Union: Aleksandra Szkutnik-Wolszcak.
United Nations: Nicolas Osbert, Aziz Karimov, Tefera Teshager.
Commerce and Industry
Government: Sobolev Oleksii, Kaplun Mykhailo, Marina Khlystun, Bochkivska Vita, Mozhnyi Oleh, Raupov Rustam, Inna Grygorenko.
World Bank: Alberto Criscuolo, Iryna Piontkivska.
European Union: Federico Mollet.
United Nations: Nicola Cantore, Dorina Nati, Noriko Takahashi, Marco Matteini, Serhiy Porovskyy.
Finance and Banking
Government: Zhak Oleksii Petrovych, Pervin Dadashova
World Bank: Johanna Jaeger, Tetiana Belska
European Union: Alessandro Nocera, Frederico Mollet
United Nations: n/a
Energy and Extractives
Government: Andarak Roman, Kyian Yuliia, Natalia Khotsianivska, Oleksandr Petroshchuk, Valerii Bezus, Krapyvnytskyy Pavlo, Volodymyr Pustovgar, Mykhailo Kopach, Mykola Khevpa, Nataliya Bondaryeva.
World Bank: Silvia Martinez, Koji Nishida, Roman Novikov, Sandu Ghidirim, Wolfhart Pohl.
European Union: Vincent Winterhager.
United Nations: Prashant Kumar, Yuliia Rybak, Anna Piwowarska, Tetiana Tavlui, Julien Le Sourde, Martine Jahre, Marco Matteini, Oleg Dzioubinski, Denys Motorniy, Serhiy Porovskyy,Tobias Homan.
Transport
Government: Tymur Tkachenko, Serhiy Derkach, Oleksandr Fedorenko, Yaroslav Ilyasevych, Oleksandr Dyachenko, Kateryna Onishchenko, Olga Ryabova, Dmytro Kushpil, Yuliana Sidliarova, Maryna Babii, Pechonchyk Taras.
World Bank: Gregoire F. Gauthier, Yevhen Bulakh, Anna Vazhnenko, Anton Hagen, Galyna Beschastna.
European Union: Janis Wiegand.
United Nations: Mekki Lahlou, Nicolas Rallo, Elkhan Nahmadov, Sarantis Poulimenakos, Hatem Oueslati, Elene Aglazde, Arun Narayanan, Stefanie Holzwarth, Ximena Manchego.
Telecommunications and Digital
Government: Matsyk Yurii, Maxim Kushnir, Nazarenko Yevhen.
World Bank: Maria Claudia Pachon, Thomas Chalumeau, Mykhailo Koltsov, Marta Khomyn.
European Union: Mohammad Sharifi.
United Nations: Viktoriia Omelianenko, Tomoyoshi Koume, Jaroslaw Ponder, Theresa Chorbacher, Livia Schaeffer Nonose, Diana Moshkovska and Olha Bilousenko (Lviv Media Forum).
Water Supply and Sanitation
Government: Oleksandr Petroshchuk, Natalia Khotsyanivska, Shpytko Oleksandr.
World Bank: Stjepan Gabric, Martin Benedikt Albrecht, Ivaylo Hristov Kolev.
European Union: Aleksandra Szkutnik-Wolscak.
United Nations: Nicolas Osbert, Siima Syson, Tobias Homan, Anne Bousquet.
Municipal Services
Government: Oleksandr Petroshchuk, Natalia Khotsyanivska, Metil Ruslan.
World Bank: Oleksandr Dovbnia, Debashree Poddar.
European Union: Frank Rothaus Jensen.
United Nations: Mustafa Sait-Ametov, Teshager Tefera, Dene Cairns, Steffen Kaeser, Noriko Takahashi, Alexey Paschenko, Nicolas Osbert, Niina Rinne, Olena Ruditch, Ana Lukatela, Maria Gutsman.
Environment, Natural Resource Management, and Forestry
Government: Kramarenko Olena, Shymkus Maryna, Olinkevych Iryna, Kateryna Nazarenko.
World Bank: Oksana Rakovych, Arno Behrens, Myles Mac Donncadha.
European Union: Aleksandra Szkutnik-Wolszcak.

United Nations: Mohammad Haris Sherzad, Sara Santolini, Tatiana Chernyavskaya, Alberto DelLungo, Augustin Plard.
DRR and Emergency Management
Government: Serheiev Oleksii, Voloshyn Ivanna, Myronova Tetiana, Filipchenko Oleg, Ryazanov Anton, Zelepuha Stanislav, Fedoseyev Mykola, Migryn Oleksiy, Nahryshko Olena, Nazarenko Yevhen.
World Bank: Zuzana Stanton-Geddes, Krunoslav Katic, Farah Soraya Ridanovic.
European Union: n/a.
United Nations: Federica Dispenza, Roman Khaschenkov.
Justice and Public Administration
Government: Vasylchuk Viktoriia, Volovyk Maksym, Inna Grygorenko.
World Bank: Tessa Cullen, Oleksandr Dovbnia, Urska Zrinski.
European Union: Andrea Silipigni, Hanna Oraheimo.
United Nations: Olena Kulikovska, Vitalii Krysko, Kei Fukagawa, Gwendoline Mennetrier, Mariana Lessa Voita, Kateryna Fishchuk, Naida Chamilova, Oksana Nazarchuk, Carolina Nieto-Gomez, Hanna Ovdiienko, Elisabeth Seidl, Viktoriya Yegorova, Arezou Farivar.
Explosive Hazard Management
Government: Ihor Bezkaravainyi, Serheiev Oleksii, Voloshyn Ivanna, Myronova Tetiana, Filipchenko Oleg, Polevoi Yuriy, Nazarenko Yevhen, Ievgeniia Bodnya, Liliia Mosol, Andriy Kondor, Valeriy Yefremov.
World Bank: Zuzana Stanton-Geddes, Krunoslav Katic, Farah Soraya Ridanovic.
European Union: n/a.
United Nations: Naomi Konza, Dmytro Kondratenko, Chirag Tiwari, Julian D'Silva.
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