Humanitarian Situation Monitoring: Settlement Vulnerability Index: Areas Closer to the Front Line
October 2023 | Ukraine

CONTEXT & RATIONALE

As the war in Ukraine continues and approaches its third year, coping capacities deplete and vulnerabilities increase, leading to an overall deterioration in the humanitarian situation. Lacking access to basic goods and services, continuous protection concerns and damage to civilian infrastructure leave civilians vulnerable, especially in areas in close proximity to the front line.

Given the dynamic nature of the humanitarian situation in Ukraine, ongoing monitoring of needs is essential to ensure a comprehensive assessment of the need types and their severity among the affected populations, to ensure that humanitarian response plans remain aligned with the situation on the ground. In line with the primary objective of REACH's Humanitarian Situation Monitoring (HSM) of providing up-to-date multisectoral data on the evolution of humanitarian needs in Ukraine to enable monitoring of change in needs (through collection of longitudinal data at the settlement level) and targeting of response plans, **the current Settlement Vulnerability Index (SVI) framework incorporated in this round is tailored to ascertain the severity of vulnerability at the settlement level in a single score**.

Considering the comparatively higher level of humanitarian needs across the areas closer to the front line observed throughout the past rounds of HSM, the current brief primarily focuses on the findings in Zones A and B (*see 'HSM Methodology Overview' on page 4*).

KEY MESSAGES

- Overall, while the inter-sectoral vulnerabilities were at Minimal level in the majority of the assessed settlements, **the humanitarian situation in settlements near the front line was concerning as 25% of settlements exhibited heightened vulnerabilities (Severe or Extreme scores)**. All settlements with an Extreme score were located in Donetska and Kharkivska Oblasts.

- The **primary driver of overall vulnerability scores in the assessed settlements was protection**, as this sector displayed the highest proportion of settlements with Severe, Extreme, and Extreme+ scores.

- In Zone A (areas within 30km from the front line),[1] Extreme vulnerability scores in the WASH sector were found in 25% of the settlements (mostly located in Donetska and Kharkivska Oblasts), mainly due to limited access to water.

SETTLEMENT VULNERABILITY INDEX (SVI) FRAMEWORK

REACH Ukraine developed this framework based on HSM indicators to determine the severity of vulnerability at the settlement level. The data utilised in the SVI's score calculation is reported by KIs referring to the situation in the whole settlement, thus does not capture specific household inputs and potential nuances within individual household situations. Accounting for the different approaches, indicators used, and objectives, the current framework should not be understood as comparable with other similar frameworks, including by REACH.

The SVI framework requires the calculation of individual composite scores for each sector, followed by a calculation of an inter-sectoral composite score as the final Settlement Vulnerability Index. **This is a pilot version of the framework, and it will undergo further adjustments following consultations with humanitarian actors and partners based on these initial results.** The final version will be made available on the REACH Resource Centre for reference and use.

The framework is composed of HSM indicators across six sectors: Food Security and Livelihoods, Shelter and Non-food items (NFIs), Water, Sanitation, and Hygiene (WASH), Healthcare, Protection, and Education. The indicators incorporated in the calculation of sectoral scores were selected based on the information they capture regarding people's access to basic services and essential items. The indicators not incorporated in the score will still be used as part of the analysis and reporting as a way to present a comprehensive overview of the situation in the assessed settlements.

'Severity' signifies the intensity of vulnerabilities in the settlement, using a scale that ranges from 1 (minimal/none) to 4+ (Extreme and Risk of Catastrophic/Sectoral Collapse). The levels of sectoral vulnerability imply:
- **None/minimal:** Essential basic sectoral needs are met in the settlement,
- **Stress**: Borderline inability to meet basic sectoral needs in the settlement,
- **Severe**: Moderate inability to meet basic sectoral needs in the settlement,
- **Extreme**: Extreme inability to meet basic sectoral needs in the settlement,
- **Extreme+**: Collapse of basic services and/or total inability to meet basic sectoral needs in the settlement,

Both sectoral and inter-sectoral composite scores were calculated using the arithmetic mean (average) of scores and were rounded up if the score has a decimal of 0.5 or higher to assign it to a value (1-4+, Minimal to Extreme+). The sectoral score is calculated based on the sectoral indicators incorporated in the framework (see Annex), and the inter-sectoral score is calculated based on the sectoral scores calculated in the previous step. If an indicator cannot be recoded to 1-4+ values, it is by default given a value of 1 (Minimal). In cases where only part of the conditions satisfies for a given level of vulnerability for the selected indicator / combination of indicators as specified in the SVI Framework, those cases will be classified with one lower level (e.g., 'Severe' instead of 'Extreme'). Please refer to the Framework for more details.
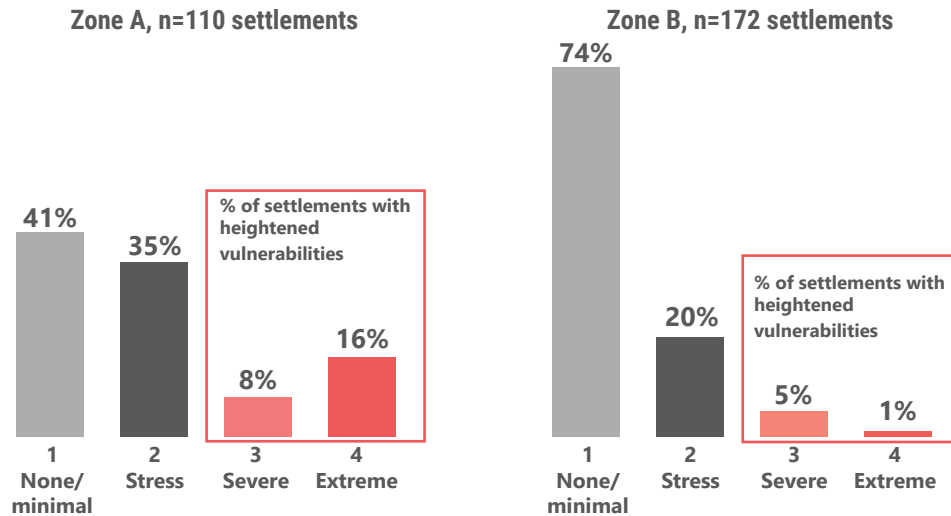
The approach of calculating the 'average' score has its limitations primarily in relation to limited sensitivity to outliers (e.g., if a particularly strong indicator is showing a severe situation by itself, or if one of the sectors indicates a severe vulnerability of the settlement by itself). To account for this, the sectoral scores are to be reviewed as a second level of the analysis to identify settlements where only a single or limited number of sectors is/are showing a severe situation and due to the average approach the settlements are classified in a lower-level vulnerability group. Where relevant, the scores for individual indicators/indicator combinations will also be reviewed for a comprehensive understanding of what drives higher levels of settlement vulnerabilities.

Due to the included data being indicative in the scoring process, the resulting scores cannot be considered representative of the conditions within settlements and offer an approximate understanding of the humanitarian situation.

OVERALL SETTLEMENT VULNERABILITY SCORE

Figure 1: % of assessed settlements by the level of vulnerability and by zone[2]

Zone A, n=110 settlements

Zone B, n=172 settlements

% of settlements with heightened vulnerabilities

Zone A: 1 None/minimal 41%, 2 Stress 35%, 3 Severe 8%, 4 Extreme 16%

Zone B: 1 None/minimal 74%, 2 Stress 20%, 3 Severe 5%, 4 Extreme 1%

Figure 2: % of settlements found to have an SVI score of Severe, Extreme or Extreme+, per sector

| Sector	%
Protection	70%
WASH	21%
Healthcare	14%
Shelter & NFIs	13%
Food Security & Livelihoods	13%
Education	10%

Overall, the level of vulnerability was comparatively higher in the assessed settlements closer to the front line. **Of 110 assessed settlements in Zone A, 16% (n=18/110) appeared to have an Extreme level of overall vulnerability.** These settlements were concentrated in Donetska and Kharkivska Oblasts: **Krasnohorivka, Marinka, Kurakhove, Avdiivka, Sviatohirsk, Vuhledar, Velyka Novosilka, Chasiv Yar, Zalizne, Siversk, Zvanivka, Hrodivka, Lyman** (Donetska Oblast), **Tsyrkuny, Kurylivka, Kupiansk, Vilkhuvatka,** and **Dvorichna** (Kharkivska Oblast). In addition to the highest level of overall vulnerability, these settlements **(n=18/110)** also displayed at least a Severe level of vulnerability across all sectors, except in the education sector. Additionally, in Zone A, another **eight** settlements in Donetska and Kharkivska Oblasts had a Severe score of overall vulnerability in October 2023. The only settlement outside these two oblasts displaying a Severe score of overall vulnerability was **Blahodatne** in Chornomorska hromada, Mykolaivska Oblast.

Notably, the only settlements in Zone B where the level of overall vulnerability reached an Extreme score were Shevchenkove and Donets in Kharkivska Oblast. Both settlements were retaken by the Ukrainian Government in September 2022 after the full-scale war broke out in February 2022.[3]
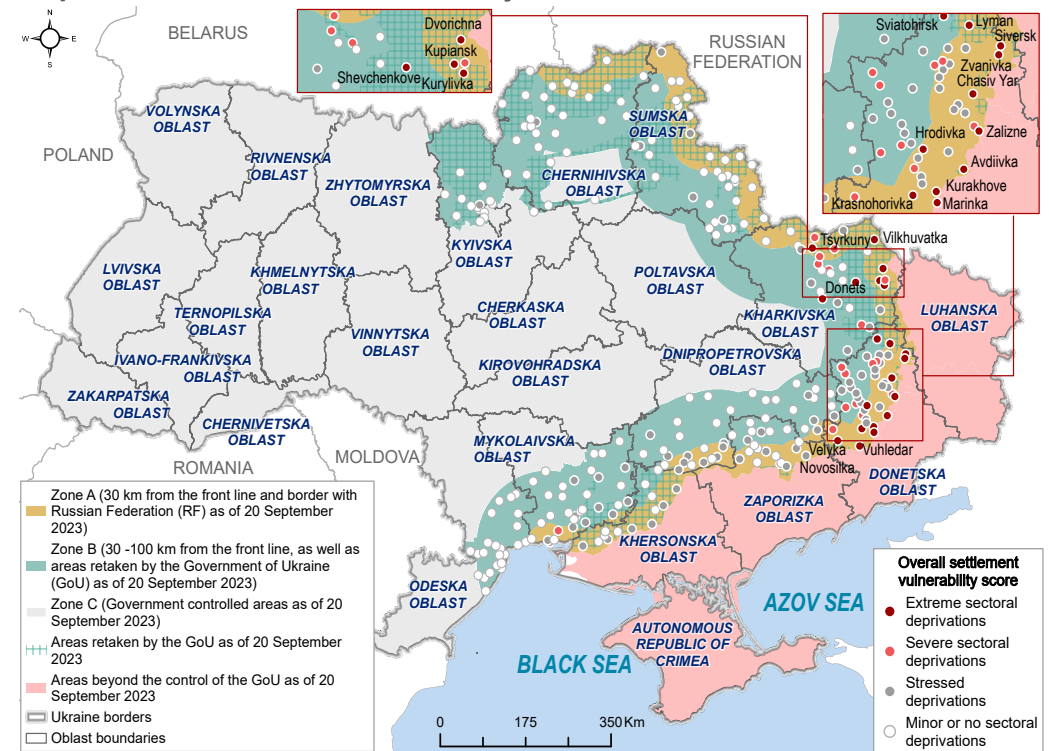
The high overall vulnerability scores for settlements were primarily driven by the protection sector and to a much lesser degree WASH sector. These two sectors displayed the highest proportion of settlements with Severe or higher vulnerability scores (protection **(n=198/282)** and WASH **(n=59/282)**), highlighting the notable vulnerability of the settlements in these particular sectors.
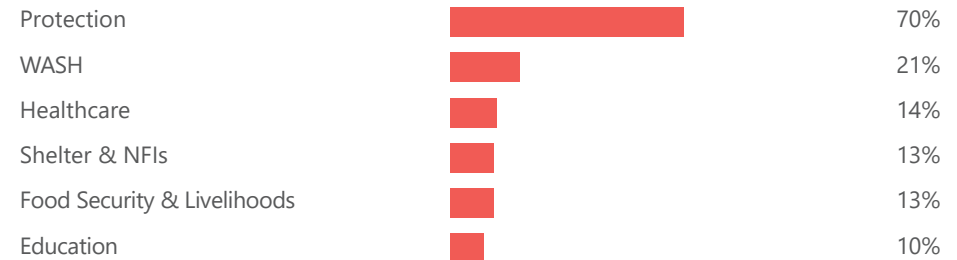
Notably, the data indicates a **strong correlation between the SVI score and the overall level of needs reported by KIs**, suggesting that the vulnerability score can be a valuable tool for monitoring areas that are more likely to require humanitarian assistance and resources.

Map 1: Settlements in Zones A and B by overall SVI scores

Zone A (30 km from the front line and border with Russian Federation (RF) as of 20 September 2023)

Zone B (30 -100 km from the front line, as well as areas retaken by the Government of Ukraine (GoU) as of 20 September 2023)

Zone C (Government controlled areas as of 20 September 2023)

Areas retaken by the GoU as of 20 September 2023

Areas beyond the control of the GoU as of 20 September 2023

Ukraine borders

Oblast boundaries

0 175 350 Km

Overall settlement vulnerability score
- Extreme sectoral deprivations
- Severe sectoral deprivations
- Stressed deprivations
- Minor or no sectoral deprivations

SECTORAL VULNERABILITY SCORES

👐 PROTECTION

	None/minimal	Stress	Severe	Extreme	Extreme+
Overall (n=282)	25%	5%	**54%**	10%	6%
Zone A (n=110)	8%	5%	**55%**	**17%**	**14%**
Zone B (n=172)	35%	5%	**53%**	5%	2%

Protection appeared to be the main driver of heightened vulnerabilities with **70% (n=198/282)** of the assessed settlements having Severe, Extreme, and Extreme+ vulnerability scores. **In Zone A, a considerable proportion of settlements scored Extreme (n=19/110) or Extreme+ (n=15/110), nearly** all located in **Donetska** and **Kharkivska Oblasts**. In the settlements with Extreme and Extreme+ vulnerability scores in protection in Zones A and B **(n=46)**, the primary drivers for high vulnerability scores were the reported **threat of missile attacks (n=45/46), presence of landmines/UXOs (n=44/46), exposure to armed violence/shelling (n=43/46), damaged/destroyed property (n=42/46)**, and **attacks on civilian facilities (n=41/46)**. KIs in these settlements also reported at least some movement restrictions into or out of the settlement. In **19 out of 46** settlements, no movement into our out of the settlement was reportedly possible because of administrative restrictions.

🤲 WASH

	None/minimal	Stress	Severe	Extreme
Overall (n=282)	67%	12%	7%	**13%**
Zone A (n=110)	51%	16%	8%	**25%**
Zone B (n=172)	77%	10%	7%	6%

Overall, **21% (n=59/282)** of the settlements had Severe or Extreme WASH sectoral vulnerability scores and notably most of the settlements with an Extreme level of vulnerability **(n=27/38)** were in Zone A. The primary drivers of this score were indicators related to **access to water: in 19 out of these 27 settlements over half of the population reportedly did not have access to water** in the 14 days prior to data collection. These settlements were mostly located in **Donetska (n=13/19)** and **Kharkivska (n=5/19)** Oblasts. Furthermore, various barriers to accessing water were identified: **breakdowns/damages to water networks, water pumping stations,** and **water treatment stations,** and **lack of electricity or backup power.** These barriers considerably affected the level of sectoral vulnerabilities.

🏥 HEALTHCARE

	None/minimal	Stress	Severe	Extreme
Overall (n=282)	71%	15%	4%	10%
Zone A (n=110)	54%	20%	5%	**21%**
Zone B (n=172)	82%	12%	3%	3%

Overall, **14% (n=40/282)** of the assessed settlements received Severe and Extreme healthcare sectoral vulnerability scores. Limited access to healthcare services was the primary driver of these high sectoral scores. In nearly all of these settlements **(n=38/40)**, KIs reported that at least 1-9% of the population who needed healthcare services were unable to access them in the 14 days prior to data collection. Notably, in **22 out of the mentioned 40** settlements over 50% of the people had reportedly been unable to access the desired services.

The **most commonly reported barriers were the lack of functioning healthcare facilities**, and to a lesser degree the non-availability of sought services and movement restrictions. KIs in these settlements most frequently reported the **non-availability of emergency healthcare (n=32/40), family doctor/primary care facility (n=32/40),** and **pharmacies (n=31/40).**

🏠 SHELTER AND NFIs

	None/minimal	Stress	Severe	Extreme
Overall (n=282)	64%	23%	9%	5%
Zone A (n=110)	43%	32%	**15%**	**10%**
Zone B (n=172)	77%	17%	5%	1%

The proportion of settlements with a Severe or Extreme Shelter/NFIs vulnerability was notably higher in Zone A **(25%, n=28/110) compared to Zone B (6%, n=10/172).**

In settlements with Severe and Extreme sectoral vulnerability scores **(13%, n=38/282)**, **the primary driver of these scores of vulnerability appeared to be the limited access to safe and adequate housing.** In the vast majority **(n=36/38)** of these settlements, at least 10-24% of the population were reportedly unable to access adequate housing. **Frequent disruptions to utilities also impacted the sectoral vulnerability scores**. KIs in a large proportion of settlements reported **disruptions to electricity (n=37/38) and gas supply (n=28/38) at least every few days.**

🍲 FOOD SECURITY AND LIVELIHOODS

	None/minimal	Stress	Severe	Extreme
Overall (n=282)	62%	25%	4%	10%
Zone A (n=110)	40%	35%	4%	**21%**
Zone B (n=172)	76%	18%	3%	3%

In the majority of the assessed settlements **(62%, n=174/282)**, the food security and livelihoods sectoral vulnerability score was at a Minimal level. **Nearly all the settlements with Severe and Extreme scores (n=36/38) were located in Donetska and Kharkivska Oblasts, primarily in Zone A. The primary drivers of vulnerability were related to the accessibility of sufficient food and to markets for purchasing goods.** In nearly all these settlements, KIs reported that at least 10-24% of the population were unable to access both food and markets in the 14 days prior to data collection, indicating elevated sectoral deprivation in these areas. The **lack of functional stores and markets** in the area was the most commonly reported barrier to accessing food and markets.

📘 EDUCATION

	None/minimal	Stress	Severe	Extreme	Extreme+
Overall (n=282)	73%	18%	6%	2%	1%
Zone A (n=110)	76%	14%	5%	4%	1%
Zone B (n=172)	70%	20%	7%	1%	1%

In the education sector, **a small proportion (10%, n=27/282) of settlements displayed heightened vulnerabilities (Severe, Extreme and Extreme+).** An Extreme+ score was found in Dvorichna (Kharkivska Oblast), Udachne and Novodonetske (Donetska Oblast). The composite vulnerability score in education is primarily based on the **unavailability of facilities for educational purposes** and **Internet network disruptions**. In **15 out of 27** settlements with heightened sectoral vulnerabilities, KIs reported at least 26-50% of facilities as non-functioning or unsuitable for educational purposes in the 14 days prior to data collection. The most common reasons were reportedly the **lack of bomb shelters and damaged/destroyed facilities**. Simultaneously, there were reports of disruptions to Internet coverage in over half of these settlements, further exacerbating education-related challenges.

HSM METHODOLOGY OVERVIEW

Data collection in Government-controlled areas was conducted from **26 September - 13 October 2023** through phone interviews with **community key informants (CKIs)**: representatives from local government, local non-governmental organisations (NGOs), and specific population groups (older persons, people with disabilities, children, women, internally displaced people (IDPs), returnees, and others). **342 settlements (towns and villages)** were assessed through a total of **1310 KI interviews**.

The settlements were grouped into three geographic zones within the GCAs:
• **Zone A**: Areas within 30 km range from the frontline at the time of sampling (20 September 2023), as monitored by LiveUA, and the state border with the Russian Federation (**110 out of 342** assessed settlements).
• **Zone B**: Areas within 30-100km range from the frontline at the time of sampling, as monitored by LiveUA, Areas retaken by the GoU, and raions intersecting with these areas by 50% of the raion territory (**172 out of 342** assessed settlements).
• **Zone C**: Remaining GCAs (**60 out of 342** assessed settlements).

'Administrative centre' approach was applied in all zones:
• **All administrative centres** (including hromada, raion, and oblast centres) were sampled in **Zones A and B**.
• Only in the case of Chernihivska Oblast, where no settlements were included that were categorised as administrative centres within Zone A, with settlements being selected purposively among non-administrative-centre settlements.
• In comparison to the previous Rounds (Round 8 - 10), 26 settlements with a significance similar to administrative centres were added to the sample of Zones A and B.
• To avoid over-representation of settlements from specific oblasts in the overall sample of Zone B, rural settlements (administrative centres) were purposively sampled in these oblasts (Dnipropetrovska, Odeska).
• In **Zone C**, as it covers a wider area and a larger number of settlements, only **three administrative centres were purposively sampled in each oblast**.
• Settlements with a pre-war population size of less than 1,000 people were excluded from the sample.

To account for a possible higher variation in needs in units with a larger population, the number of KIs per settlement differed for the following **3 categories**:
• **3 KIs** in every selected settlement with a population size of 1,000-9,999*,
• **5 KIs** in every settlement with a population size of 10,000 – 99,999*,
• **7 KIs** in every selected settlement with a population size of over 100,000*.
* Population size prior to the start of the war in February 2022.
All KI responses from the same settlement were aggregated to have one data point for each variable per settlement. The **Data Aggregation Plan** used the **average approach** to aggregate the settlement responses by using a severity scale in cases of **single-choice** questions. In case of **multiple-choice** questions, the rule was to select all responses that have been reported by at least 1 out of 3 respondents, 2 out of 5 respondents, and 3 out of 7 respondents in the settlements per the relevant categories, as presented above.

In this brief, the data represents the percentage of settlements with a given sectoral and inter-sectoral vulnerability score and also a percentage of settlements (towns or villages) for which KIs reported a specific answer to a survey question. These statistics **cannot be extrapolated to represent a proportion (%) of the population, and thus should be interpreted as indicative** rather than representative. Given the small and unrepresentative sample, these results only provide an indicative understanding of the situation in the assessed areas.
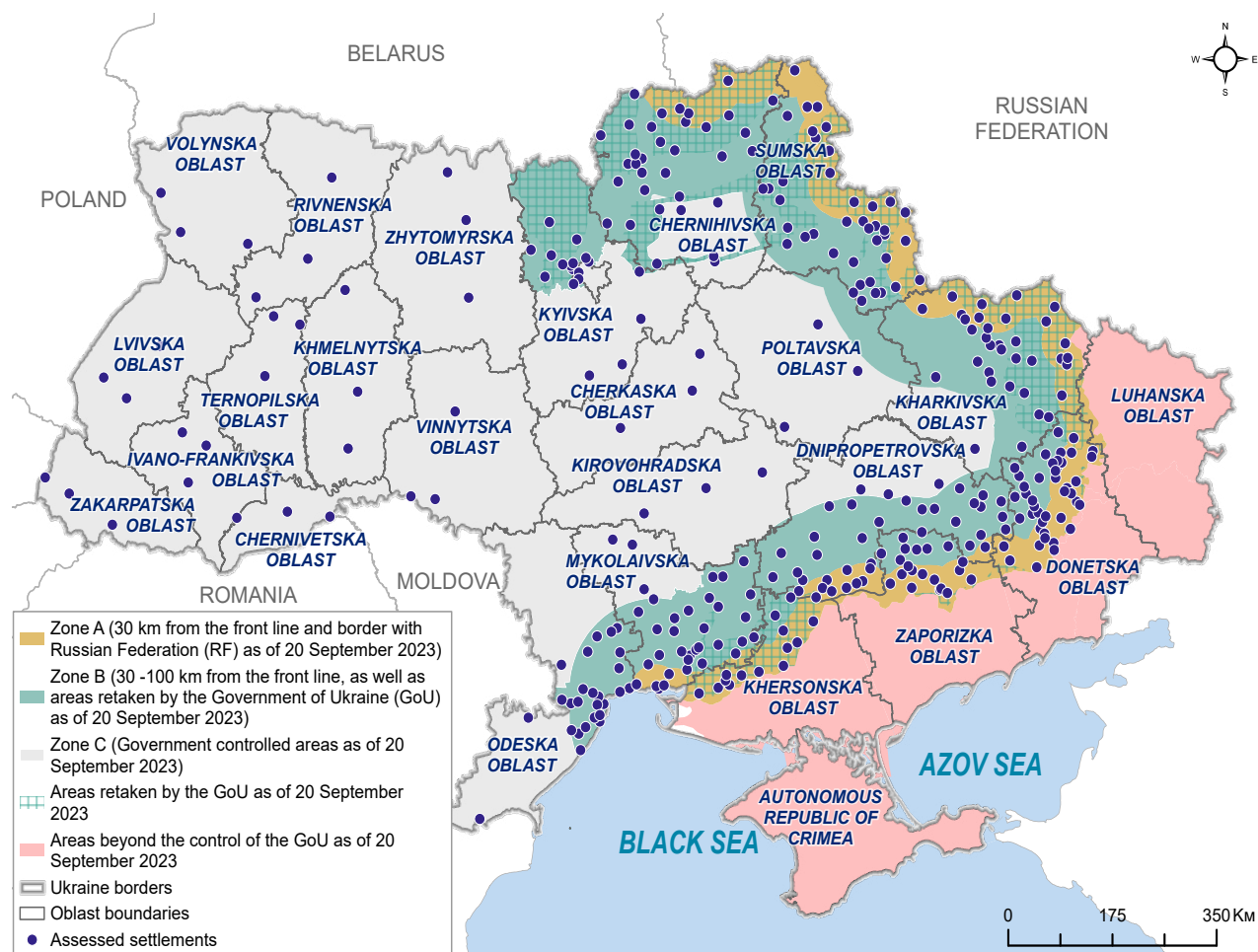
ENDNOTES

[1] Please refer to 'HSM Methodology Overview' on page 4 for details about the grouping of the settlements by Zones.
[2] Please note that due to rounding up of the figures, percentages on this factsheet may not amount exaclty to 100%. This applies to all graphs and tables in this output.
[3] CNN, Relief, but little joy, in one Ukrainian town liberated after Russian occupation, 15 September 2022

ASSESSMENT COVERAGE

Legend:
- Zone A (30 km from the front line and border with Russian Federation (RF) as of 20 September 2023)
- Zone B (30 -100 km from the front line, as well as areas retaken by the Government of Ukraine (GoU) as of 20 September 2023)
- Zone C (Government controlled areas as of 20 September 2023)
- Areas retaken by the GoU as of 20 September 2023
- Areas beyond the control of the GoU as of 20 September 2023
- Ukraine borders
- Oblast boundaries
- Assessed settlements

REACH Ukraine HSM recently introduced its new **Dashboard for Goverment-controlled areas in Ukraine**. It displays key findings and trends, which can be filtered by time periods, areas and levels of needs.

ABOUT REACH

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

ANNEX: Sectoral indicators incorporated in the SVI Framework

Sector	Indicator
Food Security & Livelihoods	% of settlements by the level of need in relation to accessing sufficient food in the 14 days prior to data collection
	% of settlements by the level of need in relation to accessing markets to purchase goods in the 14 days prior to data collection
	% of settlements by main barriers for people to access markets in the 14 days prior to data collection
	% of settlements by main barriers to accessing food items in the 14 days prior to data collection
Shelter & Non-Food items	% of settlements by the level of need in relation to accessing safe and adequate housing in the 14 days prior to data collection
	% of settlements by main barriers for people to access safe and adequate housing in the 14 days prior to data collection
	% of settlements by main barriers for displaced persons to access safe and adequate housing in the 14 days prior to data collection
	% of settlements by main sources of energy most people used for heating during winter
	% of settlements by main barriers people faced in accessing heating during winter
	% of settlements by the proportion of civilian housing damaged in the 14 days prior to data collection
	% settlements by MOST people having access to non-food items (NFIs) in the 14 days prior to data collection
	% of settlements by main barriers people faced in accessing NFIs in the 14 days prior to data collection
	% of settlements by frequency of disruptions to electricity supply in the 14 days prior to data collection
	% settlements by frequency of disruptions to gas supply in the 14 days prior to data collection
	% settlements by frequency of disruptions to phone network in the 14 days prior to data collection
	% settlements by frequency of disruptions to internet coverage in the 14 days prior to data collection

Sector	Indicator
Health	% of settlements by the level of need in relation to healthcare services in the 14 days prior to data collection
	% of settlements by main barriers people faced to access healthcare services in the 14 days prior to data collection
	% of settlements by types of healthcare/facilities people were unable to access in the 14 days prior to data collection (used only for the 'Extreme' classification)
	% of settlements by types of healthcare/facilities people were unable to access in the 14 days prior to data collection
	% of settlements by main barriers people faced to access medicines in the 14 days prior to data collection
Protection	% of settlements by main safety and security concerns faced by people in the 14 days prior to data collection
	% of settlements by the degree of restrictions on movement into or out of the settlement
Education	% of settlements by the proportion of education facilities NOT available for educational purposes in the 14 days prior to data collection
	% settlements by frequency of disruptions to internet coverage in the 14 days prior to data collection
	% of settlements by main reasons for educational facilities being unavailable for educational purposes
WASH	% settlements by frequency of disruptions to water supply in the 14 days prior to data collection
	% of settlements by the level of need in relation to accessing water in the 14 days prior to data collection
	% of settlements by main barriers people faced in accessing water in the 14 days prior to data collection
	% of settlements by the level of need in relation to accessing improved sanitation facilities in the 14 days prior to data collection
	% of settlements by main barriers people faced in accessing functional toilets in the 14 days prior to data collection
	% of settlements by main barriers people faced in accessing water in the 14 days prior to data colle