Research Terms of Reference

'Winterization – Cold Spot Risk Assessment'

UKR2215

Ukraine

October 2022
Version 1

REACH Informing more effective humanitarian action

1. Executive Summary

Country of intervention	Ukraine					
Type of Emergency	□	Natural disaster	X	Conflict	X	Other: climate hazard: extreme cold
Type of Crisis	□	Sudden onset	X	Slow onset	□	Protracted
Mandating Body/ Agency	*DART; BHA*					
IMPACT Project Code	64AVR					
Overall Research Timeframe *(from research design to final outputs / M&E)*	07/09/2022 to 07/11/2022					
Research Timeframe *Add planned deadlines (for first cycle if more than 1)*	1. Pilot/ training: none			6. Preliminary presentation: _ _/_ _/_ _ _ _		
	2. Start collect data: 07/09/2022			7. Outputs sent for validation: 18/10/2022		
	3. Data collected: 30/09/2022			8. Outputs published: 28/10/2022		
	4. Data analysed: 03/10/2022			9. Final presentation: 31/10/2022		
	5. Data sent for validation: 06/10/2022					
Number of assessments	X	Single assessment (one cycle)				
	□	Multi assessment (more than one cycle) *[Describe here the frequency of the cycle]*				
Humanitarian milestones *Specify **what** will the assessment inform and **when*** *e.g. The shelter cluster will use this data to draft its Revised Flash Appeal;*	**Milestone**			**Deadline**		
	□	Donor plan/strategy		_ _/_ _/_ _ _ _		
	□	Inter-cluster plan/strategy		_ _/_ _/_ _ _ _		
	X	Cluster plan/strategy The publication seeks to inform cluster and intercluster priorisation planning in the winterization response.		05/11/2022		
	□	NGO platform plan/strategy		_ _/_ _/_ _ _ _		
	□	Other (Specify):		_ _/_ _/_ _ _ _		
	Audience type			**Dissemination**		

Audience Type & Dissemination *Specify **who** will the assessment inform and **how** you will disseminate to inform the audience*	X Strategic X Programmatic X Operational □ [Other, Specify]	**X** General Product Mailing (e.g. mail to NGO consortium; HCT participants; Donors) X Cluster Mailing (Education, Shelter and WASH) and presentation of findings at next cluster meeting X Presentation of findings (e.g. at HCT meeting; Cluster meeting): BHA Consortium Project Implimentation Unit, and 2022 GeOnG forum (link: https://cartong.org/geong/2022) X Website Dissemination (Relief Web & REACH Resource Centre) □ [Other, Specify]
Detailed dissemination plan required	X Yes	□ No
General Objective	To understand how potential 'Cold Spots' in Ukraine influence existing vulnerabilities in order to inform prioritisation planning in the winterization response and ongoing adjustments of winter-related interventions and winterization strategies. *Definition of 'Cold Spots': Within this assessment 'Cold Spots' are defined as geographic areas, where winter-related hazards (e.g., cold waves), compound with susceptibilities (e.g., internal displacement; elderly population; etc.) and* Lack of Coping Capacity (LOCC), *impacting vulnerable people most severely.* The assessment will focus on the Cold Phase period considering winter conditions: • **Cold Phase** (Oct – Dec: decreasing temperatures and increasing numbers of cold days (on two consecutive days, the minimum temperature of a place is lower than 10 degrees Celsius) and frost days (number of days when daily minimum temperature < 0°C)). **Assessment focus**: Identify those raions where winter conditions will likely have the most impacts, compound with susceptibilities and Lack of Coping Capacity (LOCC) and influence existing vulnerabilities (= Cold Spots).	
Specific Objective(s)	1. To understand winter-related hazards, exposure, and vulnerabilities in winter 2022/23 in Ukraine. 2. To understand compounding impacts of conflict, winter-related hazards, and internal displacement on vulnerable people. 3. To assess the 'Cold Spot' risk on raion level in order to identify areas of potential increased needs during the upcoming winter months. 4. To compose comprehensive information on potential 'Cold Spot' locations to inform the winterization of the humanitarian response in Ukraine.	
Research Questions	1) Which winter-related hazards will vulnerable people be exposed to in winter 2022/23 in Ukraine? 2) How will existing vulnerabilities likely be most influenced by compounding impacts of winter-related climate conditions and ongoing conflict?	

	3) Which raions are at highest risk to become potential 'Cold Spots' and will potentially face increased needs during the upcoming winter months? 4) How can information on 'Cold Spot' risk best inform and support the winterization process of the humanitarian response in Ukraine?
Geographic Coverage	All of Ukraine on raion (admin 2) level.
Secondary data sources	- IOM: Ukraine — Area Baseline Assessment (Raion level) — Round 12 (18. Sep 2022) (link: https://displacement.iom.int/datasets/ukraine-area-baseline-assessment-raion-level-round-12). - ACLED: Conflict type = `battles` OR 'explosions/remote violence' 24.02. – August 2022 (link: https://acleddata.com/). - Population data (UNFPA 2022) (link: https://data.humdata.org/dataset/cod-ps-ukr). - Monthly income data (STATE STATISTICS SERVICE OF UKRAINE 2020) (link: ukrstat.gov.ua). - Various REACH data sets on raion level (to be defined).

Population(s) *Select all that apply*				
	□	IDPs in camp	X	IDPs in informal sites
	X	IDPs in host communities	X	IDPs [returnees]
	□	Refugees in camp	□	Refugees in informal sites
	□	Refugees in host communities	□	Refugees [Other, Specify]
	X	Host communities	X	Conflict-affected population

Stratification *Select type(s) and enter number of strata*						
	X	Geographical #:138 raions Population size per strata is known? X Yes □ No	□	Group #: _ _ _ Population size per strata is known? □ Yes □ No	□	*[Other Specify]* #: _ _ Population size per strata is known? □ Yes □ No

Data collection tool(s)				
	□	Structured (Quantitative)	□	Semi-structured (Qualitative)

	Sampling method	**Data collection method**
Structured data collection tool # 1 *Select sampling and data collection method and specify target # interviews*	**X Review of secondary data connected to winterization in Ukraine**	**X** - **Online search for open-source data sets (e.g., through HDX)** - **Consolidation of IMPACT Ukraine existing data sets (e.g., GIS files including information on cold-waves, cold days, heating capacities, etc)**
Structured data collection tool # 2 *Select sampling and data collection method and specify target # interviews* ****If more than 2 structured tools please duplicate this row and complete for each tool.*		

Target level of precision if probability sampling	_ _% level of confidence			_ _+/- % margin of error		
Data management platform(s)	X	IMPACT		□	UNHCR	
	X	ESRI ArcOnline / WebMap Builder				
Expected ouput type(s)	□	Situation overview #: _ _	□	Report #: _ _	□	Profile #: _ _
	□	Presentation (Preliminary findings) #: _ _	□	Presentation (Final) #: _ _	X	Factsheet #: 01
	□	Interactive dashboard #:_	X	Webmap #: 1	X	Map #: 04
	X	Story Map embedding WebMaps #: 01 (The #01 webmap will be displayed in the storymap)				
Access	X	Public (available on REACH resource center and other humanitarian platforms)				
		Restricted (bilateral dissemination only upon agreed dissemination list, no publication on REACH or other platforms)				
Visibility *Specify which* ***logos*** *should be on outputs*	***REACH***					
	Donor: *USAID*					
	Coordination Framework: *none*					
	Partners: *Ukraine Response Consortium, ACTED*					

2. Rationale

2.1 Background

With the beginning of the cold months the humanitarian response in Ukraine has started the winterization process. Considering the intensity of cold-climate conditions the winter period can be divided in two phases:

- Phase I: **Cold Phase** (Oct – Dec: decreasing temperatures and increasing numbers of cold days (on two consecutive days, the minimum temperature of a place is lower than 10 degrees Celsius) and frost days (number of days when daily minimum temperature < 0°C)).
- Phase II: **Extreme Cold Phase** (Jan – Feb: highest risk of extreme cold/ cold waves (days with temperature <-15°C)).

An online search for published documents on winterization approaches and strategies regarding winter 2022/23 in Ukraine has shown that climate conditions, vulnerable groups, and infrastructure capacities as well as conflict-caused damages are being partly or completely addressed and considered in winterization approaches (ACAPS 2022, OCHA 2022, REACHa 2022, REACHb 2022, REACHc 2022, REACHd 2022). However, what has not been attempted yet is to identify geographic locations of 'Cold Spots', meaning areas where winter-related climate hazards compound with susceptibility (e.g., internally displacement) and lack of coping capacity (e.g., structural damages to buildings or heating infrastructure), influencing existing vulnerabilities. This research project aims to assess the risk of 'Cold Spots' by triangulating secondary data on hazards, vulnerability, and Lack of Coping Capacities (LOCC) in order to identify potential 'Cold Spots' in Ukraine for winter 2022/23.

Key Definitions

This study follows the definition of disaster risk by the United Nations Office for Disaster Risk (UNDRR).

Risk

Risk is defined as the consequence of the interaction between hazards and the characteristics of exposure and vulnerabilities. Within this study, following risk formular is used:

Risk = Hazard x Exposure X Vulnerability (Susceptibility + Lack of Coping Capacity)

Hazard

'A hazard is a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. Hazards may be natural, anthropogenic or socionatural in origin.' (UNDRR 2017).

This study focuses on winter-related hydrometeorological hazards, including cold waves and cold temperatures.

Exposure

'The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas.' (UNDRR 2017). This study focuses on people exposed to winter-related hazards.

Vulnerability

'The characteristics determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.' (UNDRR 2017). In this study vulnerability is defined as combination of susceptibility and Lack of Coping Capacity (LOCC).

Susceptibility: People's susceptibility to the impacts of hazards, which can be enhanced due to certain conditions (e.g., internal displacement, age, economic instability).

Lack of Coping Capacity: Conditions which reduce people's capacity to cope with impacts of hazards (e.g., damages to heating infrastructures, structural damages to buildings like broken windows or pipes).

2.2 Intended impact

The research aims to inform the wider humanitarian community on potential prioritization needs (geographic or population related) relating to winter and support related programmatic or strategic decisions across sectors. Aim is to improve the understanding of winter-related hazards, exposure, and vulnerabilities and compounding impacts on people in winter 2022/23 in Ukraine. It further aims to inform donor and implementing partners' winterization approaches and the ongoing adjustment of interventions. This will be supported by the provision and dissemination of information, maps and visualizations of the location of `Cold Spots` which will likely face increased needs throughout winter across Ukraine.

3. Methodology

3.1 Methodology overview

The concept of the analysis is derived from UNDRR's risk model, which defines risk as combination of hazard, exposure, and vulnerability (consisting of susceptibility and LOCC). A geospatial analysis is carried out in order to identify those 'Cold Spots' with the highest, compounding impacts of winter-related hazards and vulnerabilities. In order to do so, following steps are carried out in two phases:

- Identify and review existing geospatial data sets (raion level or below) of winter hazards (e.g., cold days, cold waves), exposure (population statistics), susceptibilities (e.g., number of IDPs per raion; percentage of elderly population), and LOCC (e.g., infrastructure damages; central heating capacities).
- Define data sets and indicators to use in the geospatial analysis. The selecting criteria for data sets will include their quality (accuracy, completeness, and actuality) and relevance as indicator in one of the three groups (Hazard, Exposure, Vulnerability). In the decision process for including or excluding indicators, information from reviewed documents on winterization (e.g., groups particularly vulnerable to winter-related hazards like elderly)) will be considered and REACH colleagues with knowledge and experience of country- and situation-context in Ukraine will be consulted.
- Aggregate all suitable data of selected indicators to raion (admin 2) level.

- Classify data into 5 classes, using 'Quantiles' in order to identify the 20% of all raions most impacted by each indicator or 'manual interval' depending on the type and distribution of data.
- Overlay all indicator layers per group and assign the most impacted raions a class value (1 – 5 (highest)).
- Calculate the mean of the group classes in order to identify the Cold Spot Index-Class which indicates the 'Cold Spots'.
- Map the 'Cold Spot' results and produce map outputs.
- Identify data gaps and outline data needs for a further in-depth and up-to date analysis of 'Cold Spot' areas.

3.2 Population of interest

Phase I:

- National level (all raions of Ukraine).
- Population: IDPs (assessment numbers from 18. September 2022) and non-displaced populations in conflict-affected areas (special focus on elderly (>65 years)).

Secondary data review

Methodology: Use the concept of the NFORM methodology to identify 'Cold Spot' areas by analysing hazards, vulnerabilities and LOCC.
INFORM methodology: https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk/Methodology

- Research of open-source secondary data sets:
  Use HDX Data platform: https://data.humdata.org/s for identifying secondary data sources and reviews.
- Analysis of IDP numbers per raion:
  Data set: IOM: Ukraine — Area Baseline Assessment (Raion level) — Round 12 (018. Sep 2022), (link: https://displacement.iom.int/datasets/ukraine-area-baseline-assessment-raion-level-round-12).
- Analysis of raions with most conflict incidences:
  Dataset: ACLED: Conflict type = `battles` OR 'explosions/remote violence' 24.02. – August 2022, (link: https://acleddata.com/).
- Analysis of average monthly income per household (admin1 level):
  Data set: Monthly average income data (STATE STATISTICS SERVICE OF UKRAINE 2020), (link: ukrstat.gov.ua).
- Analysis of percentage of elderly population per raion:
  Data set: Population data (UNFPA 2022), (link: https://data.humdata.org/dataset/cod-ps-ukr).
- Analysis of cold conditions, heating capacities and needs:
  Various REACH assessments and data sets (to be defined).

3.3 Primary Data Collection

3.4 Data Processing & Analysis

Software used: ArcGIS Pro; QGIS & Excel

Review secondary data sets and conduct a geospatial analysis to identify those raions which are most severely impacted by all indicators (hazards, exposure, vulnerabilities) to identify Cold Spots:

- Assess data quality & usability:

Assessed quality indicators: completeness, actuality, reliability of source, consistency.
Assessed usability indicators: relevance as indicator of hazard, exposure, or vulnerability in context of the analysis; type of data; coverage (are all raions covered?), sensitivity of information (can the data be analysed & shared considering 'Do No Harm Principles'?).

- Identify relevant indicators across hazards, exposure, and vulnerability.
- Aggregate all useable data to raion (admin 2) level.
- Classify data into 5 classes, using 'Quantiles' or 'Manual breaks', depending on the type of data and value distribution in order to identify the raions most impacted by each indicator.
- Overlay all indicator layers and identify those raions which are the most impacted raions in every indicator layer.
- Map the 'Cold Spot' results and produce map outputs.
- Identify data gaps and outline data needs for an in-depth and up-to date analysis of 'Cold Spots'.

Output: 4 maps in total:

Page 1: Overview map of Ukraine and highlighted raions which were identified as 'Cold Spots' through the analysis of indicators.

Page 2: 3 smaller maps next to each other, where one shows hazard overlay result, one shows susceptibility overlay results and one shows LOCC overlay results. Below each map is a short, written paragraph explaining the map and data that was included and was analyse. Aim of the second page is to provide insights into the methodology and data used to analyse the 'Cold Spots' which are shown in the large map on page 1.

4. Key ethical considerations and related risks

For detailed guidance on how to complete this section, see also Step 5 of the IMPACT Research Design Guidelines

The proposed research design meets / does not meet the following criteria:

The proposed research design…	***Yes/ No***	***Details if no (including mitigation)***
… Has been coordinated with relevant stakeholders to **avoid unnecessary duplication** of data collection efforts?	Yes	No primary data collection. Existing data is reviewed.
… **Respects respondents, their rights and dignity** (*specifically by: seeking informed consent, designing length of survey/ discussion while being considerate of participants' time, ensuring accurate reporting of information provided*)?	Yes	
… Does not **expose data collectors to any risks as a direct result** of participation in data collection?	Yes	Data is at raion level, admin 2, which does not allow for further individual or group identification on possible sensitive information.
… Does not **expose respondents / their communities to any risks as a direct result** of participation in data collection?	Yes	As above.

… Does not involve **collecting information on specific topics which may be stressful and/ or re-traumatising** for research participants (both respondents and data collectors)?	Yes	
… Does not involve **data collection with minors** i.e. anyone less than 18 years old?	Yes	
… Does not involve **data collection with other vulnerable groups** e.g., persons with disabilities, victims/ survivors of protection incidents, etc.?	Yes	
… Follows IMPACT SOPs for management of **personally identifiable information**?	Yes	

5. Roles and responsibilities

Table 3: Description of roles and responsibilities

Task Description	***Responsible***	***Accountable***	***Consulted***	***Informed***
Research design	GIS Officer	Research Manager	C&E Team; IMPACT HQ Research, Design, and Data Unit (RDDU)	HQ
Supervising data collection	GIS Officer	Research Manager	C&E Team	
Data processing (checking, cleaning)	GIS Officer	Research Manager	Data Officer; C&E Team	
Data analysis	GIS Officer	Research Manager	GIS Senior Officer (C&E Team)	
Output production	GIS Officer	Research Manager	*IMPACT HQ Research Department;* GIS Senior Officer (C&E Team)	*IMPACT HQ Research Department*
Dissemination	GIS Officer, Research Manager	Country Coordinator	*IMPACT HQ Research Department*	HQ, Partners, Clusters
Monitoring & Evaluation	GIS Officer, Research Manager	Country Coordinator	*IMPACT HQ Research Department*	HQ
Lessons learned	GIS Officer, Research Manager	Country Coordinator	*IMPACT HQ Research Department*	*HQ*

Responsible: *the person(s) who executes the task*

Accountable: *the person who validates the completion of the task and is accountable of the final output or milestone*

Consulted: *the person(s) who must be consulted when the task is implemented*

Informed: *the person(s) who need to be informed when the task is completed*

7. Monitoring & Evaluation Plan

IMPACT Objective	External M&E Indicator	Internal M&E Indicator	Focal point	Tool	Will indicator be tracked?
Humanitarian stakeholders are accessing IMPACT products	Number of humanitarian organisations accessing IMPACT services/products Number of individuals accessing IMPACT services/products	# of downloads of x product from Resource Center	Country request to HQ	User_log	X Yes
		# of downloads of x product from Relief Web	Country request to HQ		□ Yes
		# of downloads of x product from Country level platforms	Country team		□ Yes
		# of page clicks on x product from REACH global newsletter	Country request to HQ		□ Yes
		# of page clicks on x product from country newsletter, sendingBlue, bit.ly	Country team		□ Yes
		# of visits to x webmap/x dashboard	Country request to HQ		X Yes
IMPACT activities contribute to better program implementation and coordination of the humanitarian response	Number of humanitarian organisations utilizing IMPACT services/products	# references in HPC documents (HNO, SRP, Flash appeals, Cluster/sector strategies)	Country team	Reference_log	*[List here relevant HPC-documents to be monitored: E.g. Iraq HNO 2018, Iraq Flash Appeal Mosul, Shelter Cluster strategy]* *[List here relevant agency-documents to be monitored: E.g. UNHCR Country Strategy, UNICEF WASH Response Strategy]*
		# references in single agency documents			
Humanitarian stakeholders are using IMPACT products	Humanitarian actors use IMPACT evidence/products as a basis for decision making, aid planning and delivery	Perceived relevance of IMPACT country-programs	Country team	Usage_Feedback *and* Usage_Survey template	*[Outline here the usage survey to be implemented for this research cycle* *E.g. Usage survey to be conducted in November 2017,*
		Perceived usefulness and influence of IMPACT outputs			

	Number of humanitarian documents (HNO, HRP, cluster/agency strategic plans, etc.) directly informed by IMPACT products	Recommendations to strengthen IMPACT programs			*following the release of x outputs, targeting at least 10 partners* *E.g. Usage survey to be conducted at the end of the research cycle related to all outputs, targeting at least 20 partners]*
		Perceived capacity of IMPACT staff			
		Perceived quality of outputs/programs			
		Recommendations to strengthen IMPACT programs			
Humanitarian stakeholders are engaged in IMPACT programs throughout the research cycle	Number and/or percentage of humanitarian organizations directly contributing to IMPACT programs *(providing resources, participating to presentations, etc.)*	# of organisations providing resources (i.e.staff, vehicles, meeting space, budget, etc.) for activity implementation	Country team	Engagement _log	□ Yes
		# of organisations/clusters inputting in research design and joint analysis			□ Yes
		# of organisations/clusters attending briefings on findings;			□ Yes

Annex 1: Dissemination plan – Cold Spot Risk Assessment

A. Key events and planning dates of the broader humanitarian community, which should be taken into consideration when developing the dissemination plan:

	Internal Planning dates	External Milestones
October	Assessment findings release by Oct 31 to feed into winterization prioritization of activities and population groups	
November		Start of heating season in Ukraine
December	ToR for Cold Spots Assessment Follow Up	2023 Planning

B. Dissemination plan:

#	Products	Message	Stakeholders	Means of dissemination	Purpose	Responsible	Timeframe
BHA 64FDG							
Program goal: Introduce a cold spot approach that contextualizes vulnerability (internal displacement, socio-economic, etc) to winterization concerns (cold, damaged infrastructure, rtc)							
1.	Cold Spot Risk Assessment Fact Sheet	Index of areas at risk as a combination of hazard, exposure, and vulnerability (susceptibility & and lack of coping capacity). Recommendation is for the shelter Cluster to develop a shelter upgrade strategy prior to the rainy season	Ukraine humanitarian community	General Product Mailing	**Raise Awareness** **Inform Action**	REACH focal point	2 months prior to the extreme cold season (Jan)
			Sectoral - Cluster and Working Groups	Presentation of findings at cluster meetings	**Inform Action**	GISO officer, RM	2 months prior to the extreme cold season (Jan)
			Donor community with focus at BHA/DART	Organisation of findings presentation	**Build Understanding:** ensure donors understand the needs, which could potentially lead to influencing their planning	CD, DCC, GISO officer, RM	2 months prior to the extreme cold season (Jan)
			BHA consortium supported by IMPACT	Organisation of findings presentation and consultations with technical workstreams	**Build Understanding:** ensure BHA partners understand the needs, which could potentially lead to influencing their planning	GISO officer, RM	2 months prior to the extreme cold season (Jan)
			Humanitarian community at large	Website Dissemination (Relief Web & REACH Resource Centre)	**Raise Awareness**	IMPACT HQ	