Research Terms of Reference

Damage Impact Analysis
UKR2310
Ukraine

1 August 2023
Version 1.0

REACH Informing more effective humanitarian action

1. Executive Summary

Country of intervention	Ukraine					
Type of Emergency	□	Natural disaster	X	Conflict	□	Other *(specify)*
Type of Crisis	X	Sudden onset	□	Slow onset	X	Protracted
Mandating Body/ Agency	*BHA*					
IMPACT Project Code	ACTED code 64FNU IMPACT code TBD					
Overall Research Timeframe *(from research design to final outputs / M&E)*	1/9/2023 – 1/1/2025					
Research Timeframe *These dates align with the delivery of the first round of outputs.*	1. Pilot/ training: 1/9/2023		6. Preliminary presentation: 1/12/2023			
	2. Start collect data: 15/09/2023		7. Outputs sent for validation: 1/1/2024			
	3. Data collected: 21/10/2023		8. Outputs published: 15/1/2024			
	4. Data analysed: 21/11/2023		9. Final presentation: 30/1/2024			
	5. Data sent for validation: 21/11/2023					
Number of assessments	X	Single assessment (one cycle) – Nine outputs across multiple geographies				
	□	Multi assessment (more than one cycle)				
Humanitarian milestones *Specify **what** will the assessment inform and **when***	**Milestone**		**Deadline**			
	□	Donor plan/strategy	_ _/_ _/_ _ _ _			
	□	Inter-cluster plan/strategy	_ _/_ _/_ _ _ _			
	X	Cluster plan/strategy: • Shelter Cluster • Food Security and Livelihoods • WASH • Health	REACH will regularly liaise with relevant clusters to inform programming in these areas. Cluster input will allow selection of assessment areas and the types of information presented.			
	□	NGO platform plan/strategy	_ _/_ _/_ _ _ _			
	X	Other (Specify): • Local Governments • Oblast Governments • Institutional reconstruction actors (UNDP, World Bank)	Ongoing			

Audience Type & Dissemination *Specify **who** will the assessment inform and **how** you will disseminate to inform the audience*	**Audience type** X Strategic X Programmatic □ Operational	**Dissemination** 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) X Bilateral dissemination to local authorities.

Detailed dissemination plan required	X	Yes (upcoming)	□	No

General Objective	Inform the prioritisation of humanitarian response, early recovery and reconstruction actors through a refined understanding of the extent, severity of conflict-related damage to the built environment (residential and public service infrastructure) in conflict-affected settlements and insight into the impact of this damage through an accountability to affected population lens.
Specific Objective(s)	1. Assess the extent and severity of conflict-related damage to the built environment (including residential and public service infrastructure) in conflict-affected settlements (damage *assessment*). 2. Facilitate a detailed understanding of the *localised impacts* of damage on the short-term (humanitarian response and early recovery) and long-term (reconstruction), including: a. Availability and accessibility of essential public services: education, healthcare, water supply and quality, electricity, communication, transportation, administrative services, etc. b. Livelihoods, employment opportunities and economic productivity. c. Displacement and conditions of return. d. Social cohesion and social capital. 3. Identify and amplify community's priorities for recovery and reconstruction to facilitate their inclusion into recovery planning. 4. Identify contextual and systemic factors (enablers or barriers) likely to facilitate or hinder measures to address damage impacts, on the short- and long-term.
Research Questions	1) What is the extent, severity and density of damage to the built environment in conflict-affected settlements? a) Residential damage: i) How many private houses are damaged? ii) How many apartment buildings are damaged? iii) What is the estimated population impacted by residential damage? iv) Where is damage density the highest? b) Public and service infrastructure damage: i) How many essential public service facilities (education, healthcare communication, transportation, administrative, community services) are damaged? ii) How many utility services (water, electricity) are damaged? iii) How many social/symbolic/cultural objects are damaged? iv) Where is damage density to public and service infrastructure the highest? 2) What are the impacts of damage to the built environment with regards to: a) Residential damage i) What are the immediate needs related to residential damage? ii) What are the expected long-term needs related to residential damage? b) Infrastructure damage i) What are the immediate needs related to damage to healthcare infrastructure?

<table>
<tr><td></td><td colspan="6">ii) What are the immediate needs related to damage to education facilities?
iii) What are the immediate needs related to damage to transportation services?
iv) What are the immediate needs related to damage related to water and utilities?
v) In what way have employment opportunities and livelihoods been impacted by the damage to the build environment?
vi) What strategies have community members adopted to respond to the infrastructure and residential damage?

3) Based on identified damage impacts, what are the communities' priorities / highest needs in relation to the impact of damage, early-recovery and reconstruction?
a) Immediate needs from residential damage (Shelter)
i) What type of repairs should be prioritised?
ii) What areas should be prioritised?
b) Immediate needs from public service infrastructure damage.
i) What sectors should be prioritised?
ii) What areas should be prioritised?
iii) How can cultural heritage and community identity best be preserved?
iv) How, if at all, are populations in vulnerable positions affected differently?
4) What are the contextual and systemic factors (enablers or barriers) likely to facilitate or hinder effective response to identified damage impacts?
a) What is the local capacity to meet early-recovery and reconstruction needs?
b) What does best practice and successful early-recovery and reconstruction look like?
c) What barriers/challenges are expected in early recovery?
d) What factors are important in early recovery as expressed by the local population and how are these needs implemented?</td></tr>
<tr><td>Geographic Coverage</td><td colspan="6">Conflict affected urban settlements in East, North and South of Ukraine.</td></tr>
<tr><td>Secondary data sources</td><td colspan="6">Open Street Map, OCHA for neighbourhood boundaries, ESA Sentinel-1 and Sentinel-2 imagery, ESA WorldCover (2020), MAXAR (Geo-Eye, WorldView), UNOSAT (damage data), LUN, REACH MSNA data, reputable media sources.</td></tr>
<tr><td rowspan="5">Population(s)
Select all that apply</td><td>□</td><td>IDPs in camp</td><td>□</td><td>IDPs in informal sites</td><td colspan="2"></td></tr>
<tr><td>X</td><td>IDPs in host communities</td><td>□</td><td>IDPs [Other, Specify]</td><td colspan="2"></td></tr>
<tr><td>□</td><td>Refugees in camp</td><td>□</td><td>Refugees in informal sites</td><td colspan="2"></td></tr>
<tr><td>□</td><td>Refugees in host communities</td><td>□</td><td>Refugees [Other, Specify]</td><td colspan="2"></td></tr>
<tr><td>X</td><td>Host communities</td><td>X</td><td>Returnees</td><td colspan="2"></td></tr>
<tr><td>Stratification
Select type(s) and enter number of strata</td><td>□ N/A</td><td>Geographical #:_ _ _
Population size per strata is known?
□ Yes X No</td><td>□</td><td>Group #: _ _ _
Population size per strata is known?
□ Yes X No</td><td>□</td><td>[Other Specify] #: _ _
Population size per strata is known?
□ Yes X No</td></tr>
<tr><td>Data collection tool(s)</td><td>□</td><td>Structured (Quantitative)</td><td>X</td><td>Semi-structured (Qualitative)</td><td colspan="2"></td></tr>
<tr><td></td><td colspan="3">Sampling method</td><td colspan="3">Data collection method</td></tr>
<tr><td>Semi-structured data collection tool (s) # 1
Select sampling and data collection method and specify target # interviews</td><td colspan="3">X Purposive
X Snowballing
□ [Other, Specify]</td><td colspan="3">X Key informant interview (Target #): 10 per location</td></tr>
</table>

Semi-structured data collection tool (s) # 2 *Select sampling and data collection method and specify target # interviews*	X Purposive X Snowballing □ [Other, Specify]			X Focus group discussion (Target #): 1-3 per location		
Semi-structured data collection tool (s) # 3 *Select sampling and data collection method and specify target # interviews*	X Purposive X Snowballing □ [Other, Specify]			X Mapping focus group discussion (Target #): 1-2 per location		
Data management platform(s)	X	IMPACT		□	UNHCR	
	□	[Other, Specify]				
Expected output type(s)	X	Situation overview #: 9_	X	Report #: _ _	□	Profile #: _ _
	□	Presentation (Preliminary findings) #: 0	X	Presentation (Final) #: 9	□	Factsheet #: 3
	□	Interactive dashboard #:_	X	Webmaps #: 3	X	Map #: 24
	□	[Other, Specify] #: _ _				
Access	X	Public (available on REACH resource center and other humanitarian platforms)				
	X	Restricted (bilateral dissemination only upon agreed dissemination list, no publication on REACH or other platforms) *** Note**: Outputs access will be determined on a case-by-case basis based on the locations of assessed settlements (i.e. proximity to frontline), level of granularity, and sensitivity of the data presented.				
Visibility *Specify which **logos** should be on outputs*	***REACH**, BHA (USAID), ECHO*					
	***Donor:** BHA, ECHO*					
	***Coordination Framework:** NA*					
	***Partners:** UADamage, UNOSAT, LiveEO*					

2. Rationale

2.1 Background

Since the onset of the full-scale invasion of Ukraine by the Russian Federation in February 2022, numerous settlements, including large cities with dense built-up cover and rural, more sparsely populated areas, reported severe damage to both residential buildings and public service infrastructure. Areas of concern are primarily located in the frontline oblasts, particularly Donestka, Kharkivska, Khersonska, Luhanska, Mykolaisvka, Sumshchyna and Zaporizhzhia oblasts. According to a joint assessment released by the Government of Ukraine, the World Bank Group, the European

Commission, and the United Nations, the estimated cost of direct damage has reached $135 billion as of March 2023.[1] This extensive damage has both direct and indirect impacts on the population. Direct impacts include disruptions to essential services such as healthcare and education, utility network disruptions, and environmental or public health risks due to contamination. Indirect impacts may manifest as displacements, fractures in the social fabric, and a reduced capacity to recover due to a decline in social capital.

REACH has conducted residential and infrastructure damage assessments since March 2022 to inform immediate humanitarian response. As of July 2023, the availability of data and information concerning the location and severity of conflict-related damage to residential and public service infrastructure has significantly improved, thanks to the efforts of international non-government organizations (INGOs), private sector initiatives, and various levels of the Ukrainian government. However, while information on the location, extent, and severity of damage is becoming more accessible and comprehensive the situation remains highly dynamic due to continued frequent shelling. This study will provide local authorities and implementing stakeholders with current data at a critical time when they are commencing their early-recovery and reconstruction planning. In addition, unlike most damage assessments currently conducted in Ukraine, the non-sensitive data will be shared publicly.

In addition, whilst the importance of damage assessment is receiving increased acknowledgement, comprehensive and localised analyses of the *impacts* of damage on communities is still lacking. The second objective of this research cycle is therefore to frame damage impact analysis from an Accountability to Affected Population (AAP) lens, enabling humanitarian and local government actors to incorporate the perspectives, perceptions and needs of local communities into early-recovery and reconstruction planning.

2.2 Intended impact

Overall, the project's intended impact is to empower both the affected communities and the stakeholders involved in response, recovery and reconstruction efforts. By amplifying the voices of those affected and providing data-driven insights, the project strives to facilitate informed decision-making, improved resource allocation, and ultimately contribute to the sustainable and effective recovery of conflict-affected areas.

By collecting and analysing data the project will enable evidenced-based decision-making and prioritization. Firstly, by analysing remote imagery and qualitative data, the project seeks to identify the extent and severity of damage and capture the lived experiences of impacted people. This holistic approach allows for an in-depth insight into the challenges faced by the affected communities.

[1] The World Bank. (2023). Ukraine Rapid Damage and Needs Assessment. https://documents1.worldbank.org/curated/en/099184503212328877/pdf/P1801740d1177f03c0ab180057556615497.pdf

Secondly, the project intends to provide evidence-based data that can inform the prioritisation of response, recovery and reconstruction programming. This data-driven approach ensures that actors involved in such efforts have a clear understanding of the most pressing needs and can allocate resources accordingly.

Furthermore, the translation of outputs to Ukrainian serves as a crucial step towards informing local policy makers and authorities. By providing them with comprehensive and highly contextualised information, the project aims to support more robust planning and management of recovery and reconstruction processes. This localised knowledge can contribute to more effective decision-making, enabling policymakers to implement targeted strategies that address the specific needs of the communities.

3 Methodology

3.1 Population of interest

The population of interest includes host community members, IDPs and returnees in the settlements impacted by damage caused by hostilities in the East, North and South of Ukraine. Based on consultations with relevant stakeholders, settlements in Kharkivska, Izyum and Mykolaivska oblasts have been selected as the initial sites of study. As the military situation remains dynamic, additional locations will be determined on an ongoing basis, with site selection based on levels of conflict impacts, accessibility and identified information gaps. Consultations with external stakeholders such as the shelter cluster, UNDP, MedAir, and ACTED have been conducted to avoid duplication and ensure that the research targets areas that are of interest to external stakeholders and implementing partners.

3.2 Research methods

This workstream uses a mixed-methodology approach. By combining geo-spatial analysis, remote sensing, secondary data review and qualitative primary data collection, the research aims to gain a comprehensive and multifaceted understanding of the extend and impact of conflict-related damage.

3.2.1 Geo-spatial analysis through remote sensing of satellite imagery

Several methodological approaches are currently available to IMPACT in Ukraine to assess the extent and severity of damage to residential and public service infrastructure using remote sensing. Relevant approaches will be selected on a case-by-case basis based on the features of assessed areas (i.e.: size, estimated levels of damage, proximity to frontline, etc.), the specific objectives of each assessment, and the availability of satellite imagery.

Overall, assessment of conflict impact on residential and public service infrastructure will be performed through processing of high-resolution optical satellite images through established and developing partnerships with UNOSAT, UADamage and LiveEO.

UNOSAT uses images provided by MAXAR company (World-View and Geo-Eye satellites with 50 cm spatial resolution) acquired during and after the conflict in several locations of Ukraine. Visual inspection of such scenes allows to detect most of the severe damage to buildings in urban settlements (see details below).

UADamage is a Ukrainian organisation leveraging artificial intelligence (AI) technologies to assess various types of conflict-related infrastructure damage. At the moment of developing this TOR (July 2023), IMPACT Ukraine is piloting a partnership with this organisation to increase the timeliness and efficiency of satellite imagery processing. Data processed by UADamage will be embedded into this research cycle's products when relevant.

LiveEO is a Germany-based earth observation company specialised in the monitoring of linear infrastructure and other objects, including industrial, education, healthcare, according to OSM data. AI-based observation is performed at a monthly frequency to detect "change" (i.e. damage) and notify users for further analysis. At the moment of developing this TOR, IMPACT is finalising a contractual arrangement with LiveEO.

The below section describes the overall methodology used to assess damage across these various approaches.

Public service infrastructure damage: Damaged buildings will be matched with previously known objects on a georeferenced database, developed using open-source information such as layers from OpenStreetMap (OSM). This dataset will be expanded with data from Google Maps and media sources. Validation will be conducted to avoid duplication of facilities and structures. Objects in the georeferenced database will be categorised as 1) infrastructure and service providers and 2) business facilities. Data for the first category will be mainly extracted from the layers prepared by OSM contributors and will include: healthcare, education, social and administrative facilities. As well, it will include important transport hubs (such as railway stations), bridges, and locations of utility network objects (such as power substations). The second category of business facilities will rely also on a specific knowledge of local retail and food shop networks. Alongside with mapping the large industrial objects in conflict-affected areas, there will be an imputation of different shops (food, medicine, veterinary, clothes, etc.) and supermarkets as an important element of local economies. These objects will be assigned to one of four categories: 'possible damage' (visible debris near building or indirect signs of damage on roofs or walls), 'moderate damage' (visible damage of walls and roofs), 'severe damage' (substantially damaged walls, destroyed roof), and 'destroyed' (only a few remnants of walls with no roof). Shops and other small facilities located on the ground floor of multiapartment living houses will be assigned to the "visible damage" or "severe visible damage" categories according to the visual damage type of the whole building. Although remote sensing satellite data cannot fully capture the damage caused by conflict hostilities, it illustrates general trends while field (ground or drone) surveys are restricted or impossible.

Absolute and relative estimates of damaged key infrastructure and facilities will be examined and reported in sharable form suitable for humanitarian actors, area-based assessments, and local authorities. Additionally, settlement-level (in form of summarized hexagonal grids, without direct mapping of damaged infrastructure due to security reasons) damage density hotspots will be mapped and presented to better inform spatial patterns of conflict impact and areas to prioritize the response.

Residential damage: To estimate conflict impact on the residential buildings in urban settlements directly affected by ongoing hostilities, IMPACT will assess the visually detected damage using high-resolution optical satellite images. These objects will be assigned to the one of four categories: 'possible damage' (visible debris near building or indirect signs of damage on roofs or walls), 'moderate damage' (visible damage of walls and roofs), 'severe damage' (substantially damaged

walls, destroyed roof), and 'destroyed' (only a few remnants of walls with no roof). Additionally, type of building (single-family home or apartment building, old or recently built), number of floors and entrances (for apartment buildings) will be assigned as necessary inputs to calculate number of apartments in specific building. This data will come from visual inspection from Google Maps, and data available for recently built houses on commercial website LUN. Building footprints will be a base data source to estimate the total number of populations who used to live in damaged or destroyed buildings. This population estimation will be based on the average number of people living in single apartments or private house specified for the given area of interest (average number of household members for oblast based on data from State Statistics Service). Hotspots of detected damage will be reported using GIS tools at neighbourhood level. Neighbourhood boundaries will be drawn with usage of official city plans rather than using historical urban zoning which precise boundaries are rather unavailable.

Overall, to connect revealed findings of damage with humanitarian needs and humanitarian actors' capacity, IMPACT will communicate with humanitarian actors and local authorities through cluster platforms. Settlement-level maps with estimated damage to infrastructure will be shared bilaterally and agglomeration-level factsheets (for specific areas) will be shared publicly. Sharing of revealed damage data in geospatial (both SHP and KML extensions for users with different GIS capacity) and table formats by request will allow to incorporate findings into humanitarian actors' workflows. Revealed findings are intended to be presented at humanitarian cluster meetings to better understand the gaps between the actual needs and response capacity.

3.2.2 Ground truthing

Ground truthing refers to the process of collecting on-site or "ground truth" data to validate or confirm the accuracy of remotely sensed or modelled data. It involves comparing the information obtained from satellite imagery, aerial photographs, or computer-generated models with actual data collected directly from the field. Ground truthing significantly increases the reliability and accuracy of remote sensing data interpretation, as it provides a means of verifying the identified features, land cover classes, or other characteristics derived from remote sensing sources. The data will be collected by enumerators with the use of a checklist developed by the research team. By collecting ground truth data, the study will be able to assess the accuracy, validate classifications, and make necessary adjustments or corrections to improve the quality of remote sensing data analysis. The feasibility and relevance of ground truthing activities will be assessed on a case-by-case basis based on analysis of the security situation and accessibility.

3.2.3 Secondary data review

Secondary data review will involve a comprehensive analysis of available data from humanitarian actors and damage assessment data from relevant partners. Additionally, relevant literature from humanitarian actors addressing humanitarian needs related to infrastructure and residential damage will be analysed. REACH will examine protection-related data, trends from Arrival and Transit Monitoring, Multi-Sector Needs Assessment and other relevant internal products to contextualise damage impact analysis and reduce risks of duplication and consultation fatigue among respondents. This data will also be utilised to identify protection risks and the needs of groups in vulnerable positions such as older people, women, children and people with disabilities and IDPs. With the use of secondary data, REACH will develop an understanding of the primary drivers and resulting needs stemming from vulnerabilities resulting from conflict-related damage to the built environment.

3.2.4 Primary qualitative data collection

By combining in-depth interviews with key informants, focus group discussions and participatory mapping, this research seeks to gather data that sheds light on the experiences, perceptions, and challenges faced by actors and communities affected by residential and infrastructure damage, as well as the broader implications for community resilience and post-conflict recovery and reconstruction efforts.

- **Key informant interviews** will be conducted with local government officials, representatives of local civil society organisations (CSO), and relevant sectoral actors (Shelter, Health, Education, WASH, etc.). Interviews will focus on assessing damage and identifying needs at the settlement level, as well as gather information on existing response and repair efforts and local implementation capacities and resources. A total of 12 to 15 KI interviews will be conducted per location, KIs will be selected based on background and occupation related to residential and infrastructure damage.
- **Focus groups** will be organised with community members representing various populations of interest. These sessions will aim to gather information on needs and impact of the damage and identify preferences for prioritisation in the context of recovery and reconstruction work as expressed by community members. Participant selection will be based on a cross section of the local community, with the aim to include diverse representation based on gender, age, and socioeconomic background. Focus groups will exist of 6 to 8 participants. The sessions will be recorded and verbatim transcribed in order to be able to include quotes in the research outputs.
- **Participatory mapping** is a collaborative approach that engages local communities and stakeholders in the process of creating maps. Participatory mapping will allow respondents to actively participate in mapping their environment, resources, and knowledge in relation to infrastructural damage impacts in their settlement, ensuring their voices are heard and their expertise is recognised. By involving community members in data collection and representation, participatory mapping promotes community ownership, supports decision-making processes, and facilitates communication and collaboration among different stakeholders. To conduct this research methods the research team will develop laminated large print out maps of the area that will allow focus groups participants and key informants to use white board markers to indicate what areas they believe should be prioritised in relation to residential and infrastructure damage recovery and reconstruction.

Sampling: Key informants and discussion group members will be purposively (via snowballing technique) selected via two parallel strategies:

1. Local authorities will provide contacts of key informants.
2. A contact list of key informants will be established based on existing REACH networks.

Tools: Semi-structured questionnaires. Discussions will be recorded, and notes will be taken by enumerators during the discussion. After every KI interview and FGD, debriefs will be held with enumerators. In these debriefs, enumerators will be

asked to share their thoughts and experience on the data collection activity, as neutrally as possible. These debriefs will be recorded and shared with HQ using the IMPACT debrief template.

Triangulation: The responses of the various KI groups (residents, local government representatives, CSOs representative, service providers, etc.) will be compared to give an indication of the various types of infrastructural damage impacts.

3.3 Open data sources to be utilised

Data source	Short description	Area	Available data and comment
Sentinel-1	Remote sensing	Global	Radar imagery (10 m)
Sentinel-2	Remote sensing	Global	Multispectral imagery (10 m)
World-View and Geo-Eye	Remote sensing	Specific locations of interest	RGB-composites of visible bands (50 cm)
FIRMS	Remote sensing	Global	Thermal anomaly detection (500 m)
OCHA Settlement Boundaries	Administrative boundaries	Ukraine	Admin boundaries
OSM buildings network	Vector layer	Global	raw OSM
OSM road, electricity network	Vector layer	Global	raw OSM
Google Maps	Locations of facilities and structures	Global	Locations to impute into the main database
UNOSAT damage data	Vector layer	Ukraine	Locations of damaged structures

3.4 Limitations

This study is based on two research methodologies, GIS and qualitative research which have their own distinct limitations. GIS (Geographic Information Systems) research is subject to several limitations.

The accuracy of GIS analysis relies heavily on the quality of the available satellite imagery. Shelling that occurred post-procurement of imagery, clouds and low-resolution imagery may lead to challenges in spatial analysis and interpretation, Whilst major damage may still be detected with lower accuracy imagery, these factors may impact the ability to detect minor damage, such as broken windows.

Qualitative research provides invaluable insight into complex human behaviors and motivation. However, the subjective nature of qualitative data collection and analysis can introduce bias, making it challenging to ensure objectivity and reproducibility. These limitations will be mitigated with the use of the data saturation grid.

Data Processing & Analysis

For geo-spatial data processing and analysis, see section 3.4.1 above (*Geo-spatial analysis through remote sensing of satellite imagery*).

Qualitative data: The accuracy, consistency, and reliability of the data will be ensured with the use of the data saturation grid. The data will firstly be systematically organised and coded, with similar themes and concepts grouped together. Next,

any irrelevant or duplicate data is removed, and any missing or incomplete information is addressed through careful data augmentation or contacting participants for clarification. The research team will additionally critically examine the data for potential biases, inconsistencies, or errors. Finally, the cleaned data is documented and stored in a secure manner, and subsequently analysed to develop a narrative.

Overall, the fact sheets and situational overviews produced under this research cycles will include:

- Damage assessment mappings (geo-spatial analyses)
- Damage impact analysis (based on primary qualitative data)
- Presentations for external stakeholders
- When relevant, web-based public-facing outputs (such as story maps)

These different components will be used independently and jointly according to the specific objectives of assessments in each assessed area.

3. Key ethical considerations and related risks

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	
… **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	
… Does not **expose respondents / their communities to any risks as a direct result** of participation in data collection?	Yes	
… 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	SAO	RM	GISO, IMPACT Research Design and Data Unit (RDD)	Shelter Cluster and implementing partners; Remote sensing partners.
Supervising data collection	Field Officer	Field Coordinator	Impact CC	Operational partners (ACTED)
Data processing (checking, cleaning)	AO/DBO/GISO	SAO	HQ RDD	RM
Data analysis	AO/SAO/GIS	SAO	HQ RDD	RM
Output production	AO/SAO/GIS	RM	RM	RM, DCC
Dissemination	SAO/RM	RM	RM	(See dissemination plan)
Monitoring & Evaluation	AO/SAO	RM	RM	CC
Lessons learned	AO/SAO	RM	RM	CC

4. Data Analysis Plan

Please see the attached Data Analysis Plan.

5. Data Management Plan

Administrative Data		
Research Cycle name	*Damage Impact Assessment*	
Project Code	*ACTED Code 64FNU* *IMPACT code TBD*	
Donor	*BHA, ECHO*	
Project partners	*UADamage*	
Research Contacts	*Antoine Chandonnet – antoine.chandonnet@impact-initiatives.org* *Charlotte ten Have – charlotte.ten-have@impact-initiatives.org*	
Data Management Plan Version	*Date: 12/08/2023*	*Version: 1*

Related Policies	*[List any relevant policies/procedures on data management, data sharing and data security that this project will be based on]*			
Documentation and Metadata				
What documentation and metadata will accompany the data? *Select all that apply*	X	Data analysis plan	□	Data Cleaning Log, including: □ Deletion Log □ Value Change Log
	□	Code book	□	Data Dictionary
	□	Metadata based on HDX Standards	X	Qualitative data saturation matrix
Ethics and Legal Compliance				
Which ethical and legal measures will be taken?	X	Consent of participants to participate	□	Consent of participants to share personal information with other agencies
	X	No collection of personally identifiable data will take place	X	Gender, child protection and other protection issues are taken into account
	X	All participants reached age of majority		[Other, Specify]
Who will own the copyright and Intellectual Property Rights for the data that is collected?	Impact Initiatives			
Storage and Backup				
Where will data be stored and backed up during the research?	□	IMPACT/REACH Kobo Server	□	Other Kobo Server: *[specify]*
	X	IMPACT Global Physical / Cloud Server	□	Country/Internal Server
	□	On devices held by REACH staff	□	Physical location *[specify]*
	X	Recording and transcription using excel and word		
Which data access and security measures have been taken?	X	Password protection on devices/servers	X	Data access is limited to IMPACT staff
	□	Form and data encryption on data collection server	□	Partners signed an MoU if accessing raw data
	□	[Other, Specify]		

Raw Data Access Rights

Raw Data Access	Reason	Person
Accountable	Accountable	Charlotte ten Have
Access	GIS officer needs access to develop maps and conduct analysis	Taras Hinchuk
DBO	Maintain an accurate and clean database throughout the collection and analysis process	Anastasiia Pylaeva
AO	The AO will need access in order to process the qualitative data collected in the database	TBC

RM	The RM will need access to the raw dataset to provide advice and support throughout the analysis process	Antoine Chandonnet

Preservation				
Where will data be stored for long-term preservation?	X	IMPACT / REACH Global Cloud / Physical Server	□	OCHA HDX
	□	REACH Country Server	□	[Other, Specify]
Data Sharing				
Will the data be shared publicly? * Note: Outputs access will be determined on a case-by-case basis based on the locations of assessed settlements (i.e. proximity to frontline), level of granularity, and sensitivity of the data presented.	X	Yes	X	No, only with mandating agency / body
Will all data be shared?	□	Yes	X	No, only non-sensitive data will be shared
	□	No, [Other, Specify]		
Where will you share the data?	X	REACH Resource Centre	X	OCHA HDX
	X	HumanitarianResponse	X	IMPACT resource center
Data protection risk assessment				
Have you completed the Indicators Risk Assessment table below?	□	Yes	X	No, no information that potentially allows identification of individuals is to be collected.
	[Please complete the first 4 columns in the Indicators Risk Assessment table below]			

Risk indicator	Type of identification risk	Disclosure implications	Benefits	**Class**	**Required mitigation**
[Specify indicator, e.g. KI_phone number]	*[Specify identification risk, e.g. Direct contact/identification of KI]*	*[Specify implications, e.g. loss of privacy/potential target of armed actors]*	*[Specify benefits, e.g. follow up for data cleaning]*	*[To be completed by IMPACT HQ]*	*[To be specified by IMPACT HQ]*

Responsibilities	
Data collection	*Charlotte ten Have, SAO, charlotte.ten-have@impact-intiatives.org*
Data cleaning	*Charlotte ten Have, SAO, charlotte.ten-have@impact-intiatives.org*
Data analysis	*Taras Hinchuk, GIS, taras.hinchuk@impact-initiatives.org.*
Data sharing/uploading	*Charlotte ten Have, SAO, charlotte.ten-have@impact-intiatives.org*

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		X Yes
		# of downloads of x product from Country level platforms	Country team		X Yes
		# of page clicks on x product from REACH global newsletter	Country request to HQ		X Yes (when applicable)
		# of page clicks on x product from country newsletter, sendingBlue, bit.ly	Country team		X Yes
		# of visits to x webmap/x dashboard	Country request to HQ		X Yes (when applicable)
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	*Cluster strategies, Assessment and Analysis Working Group, Shelter, Health, Education.*
		# references in single agency documents			*TBD*
Humanitarian stakeholders are using IMPACT products	Humanitarian actors use IMPACT evidence/products as a basis for decision making, aid planning and delivery Number of humanitarian documents (HNO, HRP, cluster/agency strategic plans, etc.) directly informed by IMPACT products	Perceived relevance of IMPACT country-programs	Country team	Usage_Feedback *and* Usage_Survey template	*Usage survey to be distributed to local authorities, local actors, international actors 6 months after publication*
		Perceived usefulness and influence of IMPACT outputs			
		Recommendations to strengthen IMPACT programs			
		Perceived capacity of IMPACT staff			
		Perceived quality of outputs/programs			
		Recommendations to strengthen IMPACT programs			
Humanitarian stakeholders are engaged	Number and/or percentage of humanitarian organizations	# of organisations providing resources (i.e.staff, vehicles, meeting space, budget, etc.) for activity implementation	Country team	Engagement_log	□ Yes

in IMPACT programs throughout the research cycle	directly contributing to IMPACT programs *(providing resources, participating to presentations, etc.)*	# of organisations/clusters inputting in research design and joint analysis			X Yes
		# of organisations/clusters attending briefings on findings;			X Yes

Annex 1. Impact and Consensus Scores for Damage Impact Analysis

The Damage Impact Score is an indicative quantitative measure derived from primary qualitative data collected through key informant interviews and focus group discussions, triangulated with data on the extent and severity of damaged infrastructure. Sectoral in nature, this score provides an estimation on the severity of the *impacts* resulting from damage to different types of infrastructure (rather than the severity of the damage itself). This measure emphasises the degree to which specific infrastructure elements (such as power and water), public services (including education and healthcare), and residential homes are affected, rather than the types of impacts. It is meant to facilitate sectoral prioritisation for humanitarian, early recovery and reconstruction measures that address localised damage impacts. It should be considered as indicative.

Definition of impact levels (sectoral)

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

Impact scores are calculated upon the two below indicators:

1. **Reported impact severity**: Review of narratives and responses from key informant interviews and focus group discussions, identifying statements related to the extent and severity of disruptions caused by damage. Recurring themes or statements suggesting high severity of impacts indicate a higher score.
    - **Low severity (1)**: Narratives and responses indicate minimal disruptions with descriptions focusing on manageable changes or slight inconveniences. Few recurring themes or statements suggest serious impacts.
    - **Moderate severity (2)**: Responses frequently reference noticeable disruptions, with narratives describing significant but manageable challenges. Recurring themes suggest a marked impact on daily life or service accessibility.
    - **High severity (3)**: Narratives and responses consistently highlight severe disruptions, with descriptions emphasising critical challenges and major changes to living conditions or service accessibility. Recurring themes or statements often suggest high severity of impacts.
2. **Frequency of mentions** of specific issues, with higher frequency indicating the salience of this issue within respondents' perceptions of priorities.
    - **Low frequency (1)**: Specific issues are rarely mentioned or referenced only in isolated instances.

- **Moderate frequency (2)**: Issues are mentioned frequently, with a notable number of respondents discussing the same challenges or disruptions.
- **High frequency (3)**: A large majority of respondents consistently highlight the same challenges, indicating widespread impacts.

The ratings of both indicators are added to calculate the overall Damage Impact Score:

- 2 = Low impact
- 3-4 = Moderate impact
- 5-6 = High impact

Consensus Score

The Consensus Score is a complementary metric that evaluates the degree of agreement among different stakeholders on the impacts of damage. It reflects how uniformly the impacts are perceived among community members and key informants (local authorities), providing an indication of shared understanding of the situation. This can help ensure that recovery and reconstruction efforts are aligned with the collective experience and assessment of the affected community.

- **Low consensus**: This level reflects limited agreement among respondents, with community members and key informants (KIs) providing a wide range of responses. The varied perceptions indicate differing views or understandings of the impacts, suggesting a lack of unified perspective on the situation.
- **Moderate consensus**: There is a moderate level of consensus among stakeholders. While there are some differing viewpoints, a notable number of both community members and KIs concur on the general nature and extent of the impacts. This level suggests an overall shared understanding, albeit with some variations in experiences.
- **High consensus**: A strong consensus is evident among a majority of respondents, encompassing both residents (FGDs) and local authorities (KIs). This indicates a cohesive understanding of the impacts, showing that different stakeholders have a similar perception of the challenges and issues.