

Technical
Community of Practice

Striking the right balance:
Rapid vs. Detailed Damage Assessments
for Effective Shelter Programming

25 March 2025 - 11.00 to 12.30



Striking the right balance: Rapid vs. Detailed Damage Assessments for Effective Shelter Programming



moderator

Pascal Panosetti

Global Focal Point for
Technical Coordination

Global Shelter Cluster / IFRC



**GLOBAL
SHELTER CLUSTER**

Coordinating Humanitarian Shelter and Settlements



co-moderator

Caroline Dewast

Deputy Shelter
Cluster Coordinator

Global Shelter Cluster / IFRC

Agenda

Introduction	Pascal Panosetti - GFP Technical Coordination GLOBAL SHELTER CLUSTER / IFRC
Streamlining house assessments and repairs in multi-stakeholder settings - Ukrain case study	Kostyantyn Dmytrenko, Deputy SNFI Cluster CoordinatorSHELTER CLUSTER UKRAINE
Rapid damage assessment in post-disaster and conflict settings	Matt Wencel - Senior Manager - GIS & Remote Sensing IMPACT Initiatives
Rapid Damage & Detailed Repair Housing Assessments - pros and cons - Afghanistan & Turkey	Dr. H. Kit Miyamoto, CEO - Structural engineer MIYAMOTO INTERNATIONAL
Rapid Damage Assessment - Beirut Blast 2020	Regina Wenk - Structural engineer SWISS HUMANITARIAN AID UNIT - SET / SDC
Household and Building Damage Assessment (HBDA): Actionable Insights for Effective Post-Crisis Recovery	UNDP Arnold Njogu - <i>IM/GIS Officer</i>
Plenary Discussion - Q&A	Facilitated by Pascal Panosetti & Caroline Dewast
Conclusion	Caroline Dewast - Deputy Coordinator GLOBAL SHELTER CLUSTER / IFRC



Kostyantyn Dmytrenko
Deputy SNFI Cluster Coordinator
SHELTER CLUSTER UKRAINE / UNHCR



Matt Wencel
Senior Manager GIS & Remote Sensing
IMPACT INITIATIVES



Dr. H. Kit Miyamoto
Global CEO & Humanitarian Coordinator
MIYAMOTO INTERNATIONAL



Regina Wenk
Structural civil engineer
SWISS HUMANITARIAN AID UNIT / SDC



Arnold Njogu
IM/GIS Officer
UNDP



Streamlining house assessments and repairs in multi-stakeholder settings

SHELTER CLUSTER UKRAINE – case study

Kostyantyn Dmytrenko
Deputy SNFI Cluster
Coordinator

Fourth Rapid Damage and Needs Assessment (RDNA4)

- The housing sector remains the most affected, with direct losses estimated at over \$57 billion.
- As of December 2024,
 - 320,000 single family houses and
 - 27,000 multi-apartment buildings were damaged or destroyed,
 - Overall, more than 2.5M households have been affected.

RDNA1: February 24, 2022 – June 1, 2022



RDNA2: February 24, 2022 – Feb 28, 2023



RDNA3: February 24, 2022 – December 31, 2023



RDNA4: Feb 2022 – December 31, 2024



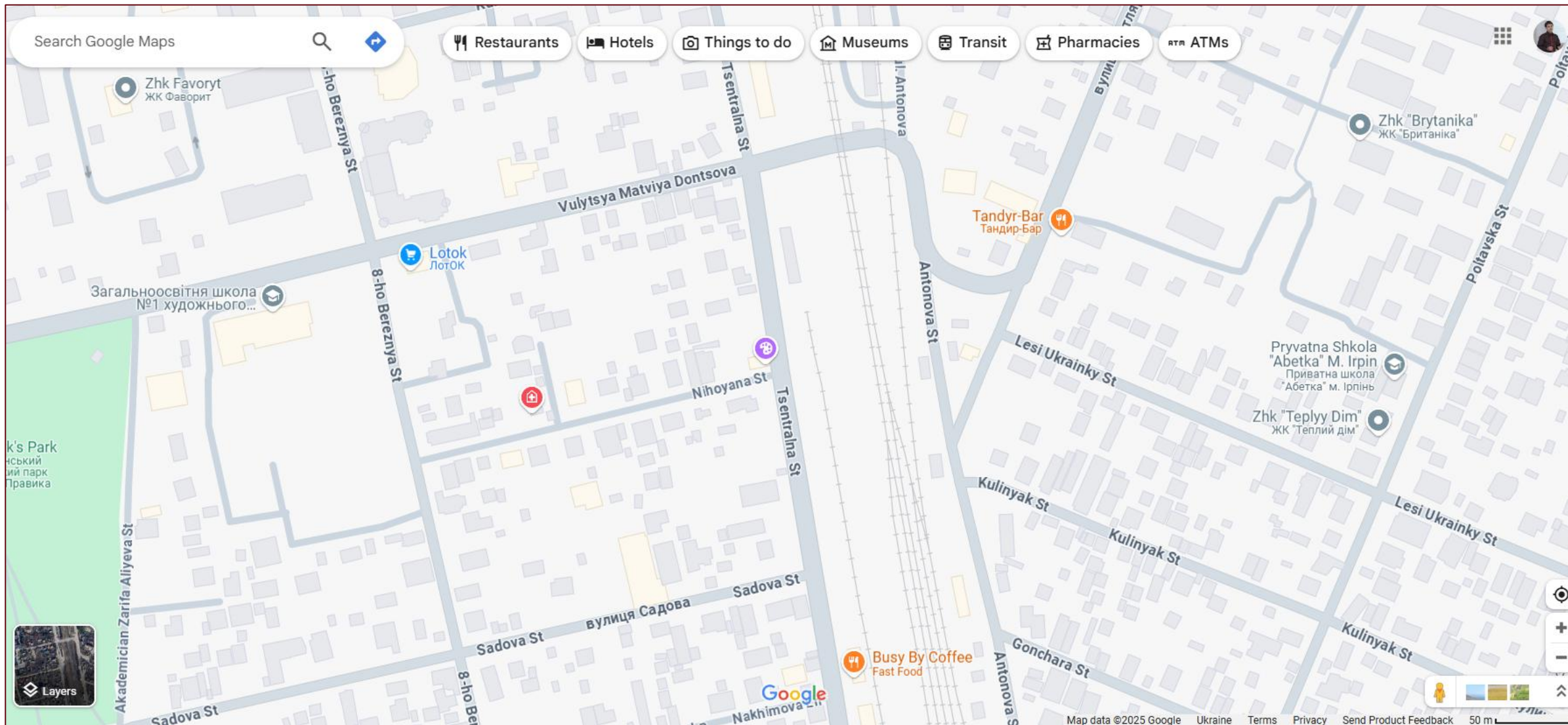
Increase between RDNA3 (December 31, 2023) and RDNA4 (December 31, 2024)



“Map of damage” by Texty.org.ua – Irpin city in Kyivska Oblast (Based on Planet Labs satellite imagery, 2023)



Google Maps - Irpin city in Kyivska Oblast, 2025



Damage Assessment and Compensation Framework

CHECKLIST

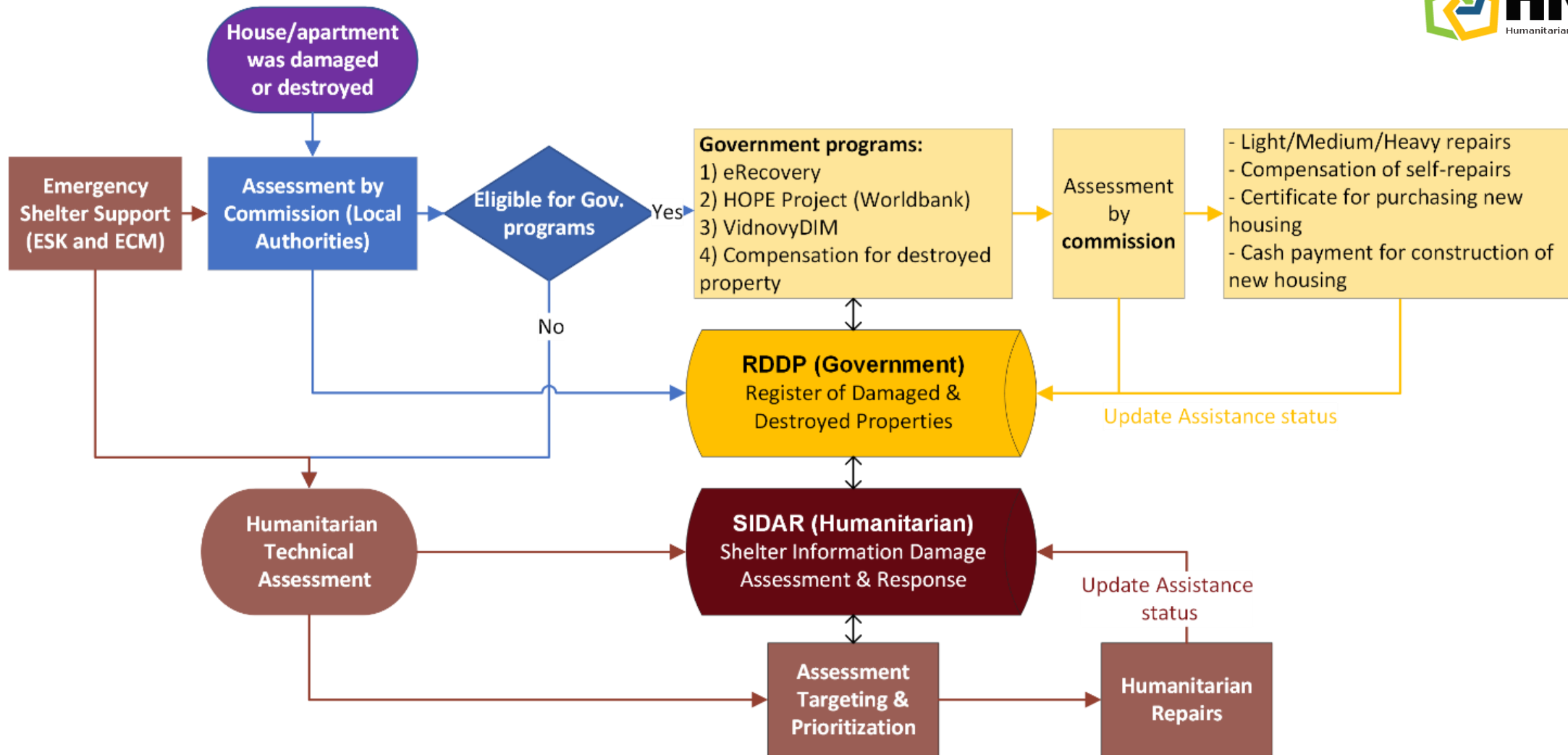
for determining the amount of compensation for the restoration of a damaged property

Compliance Criteria of the Application	Result
Type of objects	apartment/house/residential units
Is the priority right of the compensation recipient confirmed? (this field is filled only if the applicant has indicated the presence of benefits)	yes/no
Was the repair carried out at the time of completing the checklist?	yes/no/partially
Are there any damages in the property that could affect the load-bearing capacity of its structures?	yes/no

LIST

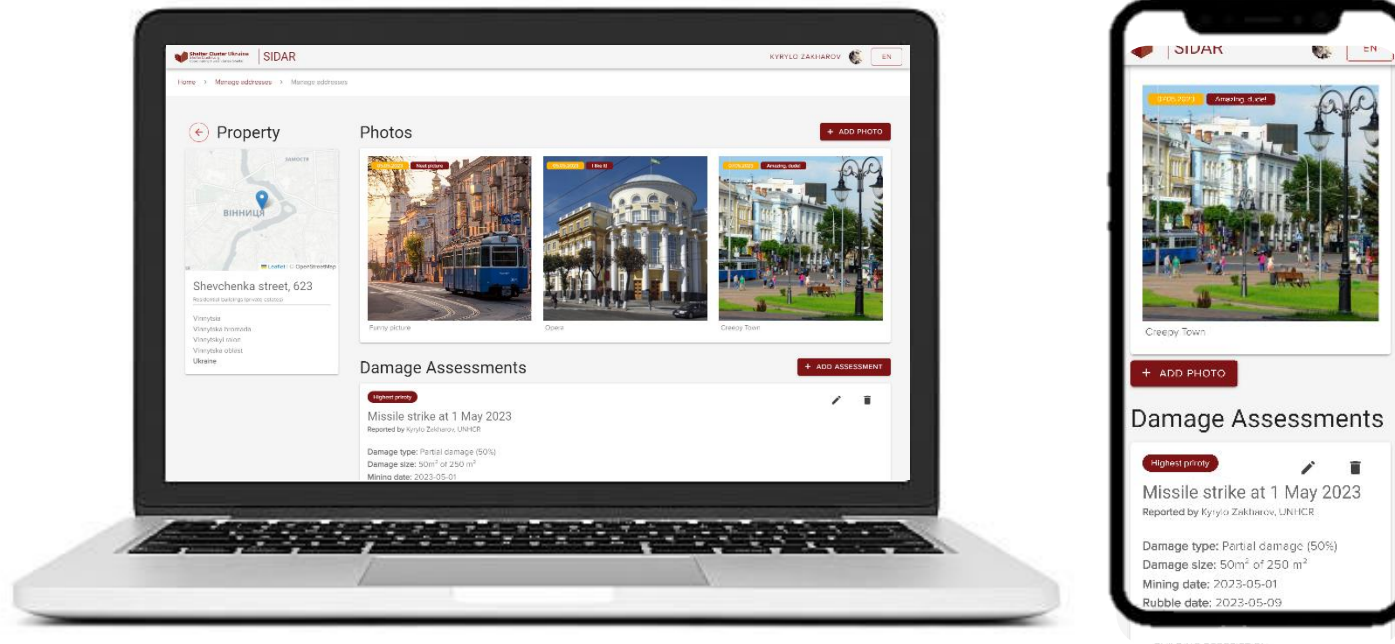
of works required to restore the operational suitability of the object

List of repair works	Unit of measurement	Average unit cost indicator, including VAT, UAH	Scope of work subject to compensation	Compensation amount, UAH
Roofing/Roof				
1. Restoration of locally damaged roofing (replacement of damaged roofing material - asbestos-cement sheets, ceramic tiles, or profiled sheet) without replacing supporting structures and roofing systems	sq. meters	512.18		
2. Replacement of rafter legs made of timber (in case of localized damage to the rafter legs in addition to point 1)	linear meters	725.42		



Assistance Flow Chart:
GoU's Compensation Mechanism and Humanitarian Shelter Support

The Shelter Information Damage Assessment & Response Database (SIDAR)



Progressive Web Application

Works on any device with a web browser

Mobile layout

Desktop and mobile versions are available

Offline mode

Works without Internet and syncs data

ADDRESSES

6,846

available of total 8,664 addresses



ASSESSMENTS

5,806

required for a total of 8,664 addresses



ACTIVITIES

2

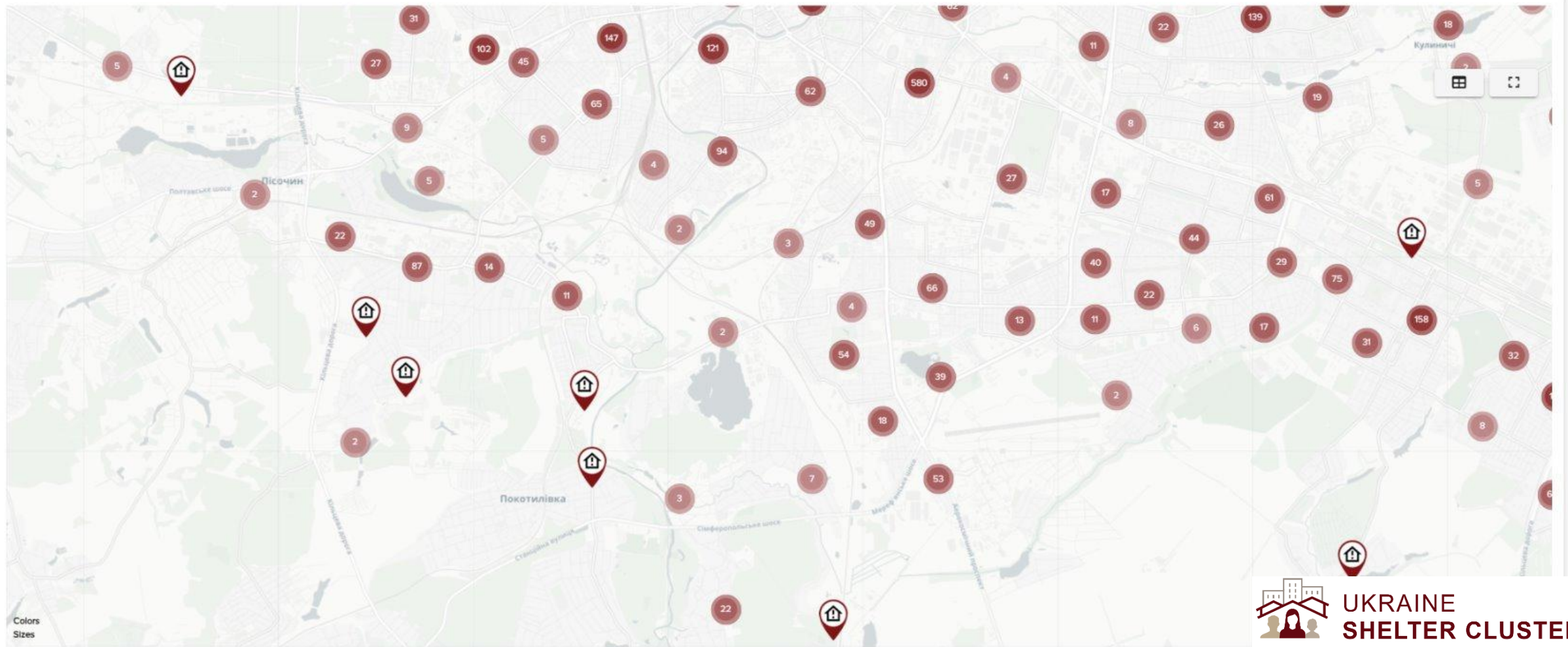
provided by your organization for a total of 16,802 repairs



CUSTOM DATA

0

records by your organization



📍 ADDRESSES

6,846

available of total 8,664 addresses

↓

✓ ASSESSMENTS

5,806

required for a total of 8,664 addresses

↓

🛠️ ACTIVITIES

2

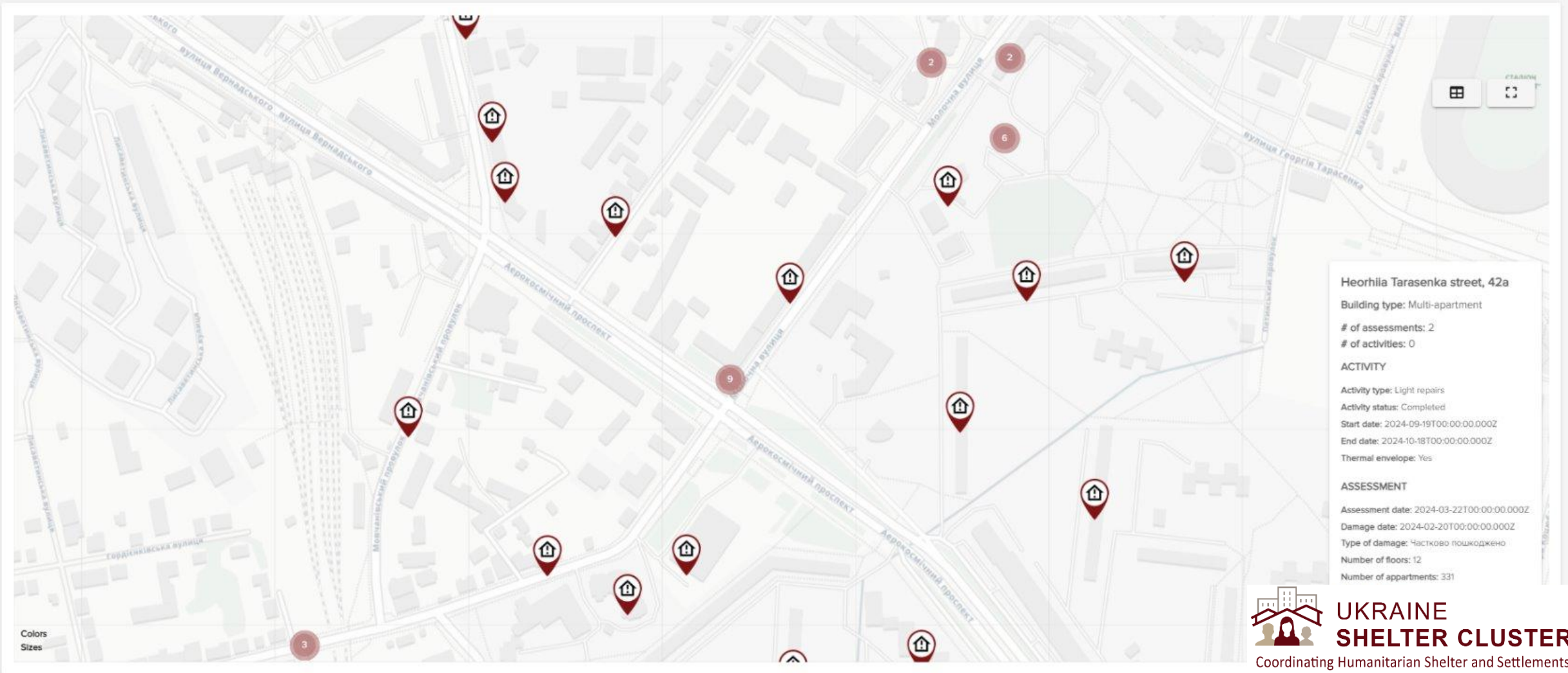
provided by your organization for a total of 16,802 repairs

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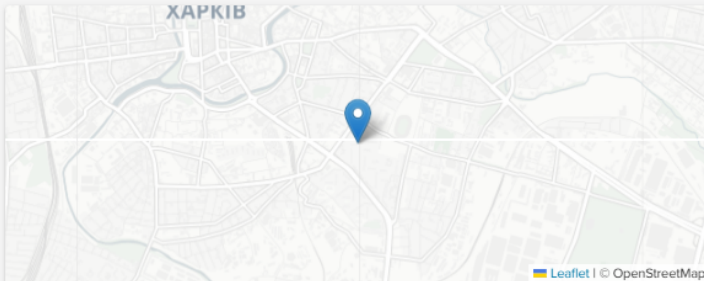
📄 CUSTOM DATA

0

records by your organization



Property



Heorhiia Tarasenska street, 42a
 Multi-apartment

Kharkiv
 Kharkivska hromada
 Kharkivskiyi raion
 Kharkivska oblast
 Ukraine

Measures taken

Action	Value	Unit
Replacement of the window unit, taking into account window boards, low tides (in particular, enclosing glass structures of a balcony/ recessed balcony*, or a metal-plastic entrance door block, including thresholds)	2.6	sq. meters
Restoration of slopes: plastering, sand-free preparation, painting`	1.79	sq. meters

Damage Assessments

Частково пошкоджено

Assessment by PIN at 22 March 2024

Reported by: Roman Zvieriev, PIN (26619576)
 Programming partner: PIN

Damage type: Частково пошкоджено
 Damage date: February 20, 2024

BUILDING DESCRIPTION

Number of floors: 12
 Number of apartments: 331

Windows

● Apartment N° 331

Windows

● Apartment N° 2

Windows

Humanitarian Activity

Apartment N° 2

Light repairs

Reported by Roman Zvieriev, PIN (26619576)

Completed

Cash

Start date: September 19, 2024

Completion date: October 18, 2024

Thermal envelope: Yes

Apartment N° 331

Light repairs

Reported by Roman Zvieriev, PIN (26619576)

Completed

In-kind (works)

Start date: March 22, 2024

Completion date: June 3, 2024

Thermal envelope: No





SIDAR Ukraine Damage & Response Overview

Filters

Hub
Yci

Oblast
Yci

Raion
Yci

Hromada
Yci

Settlement
Yci

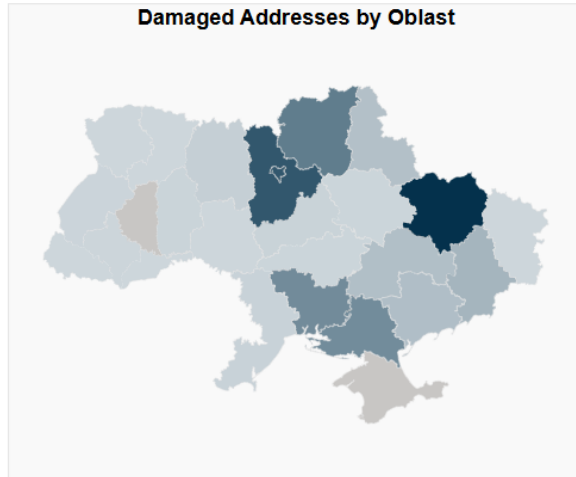
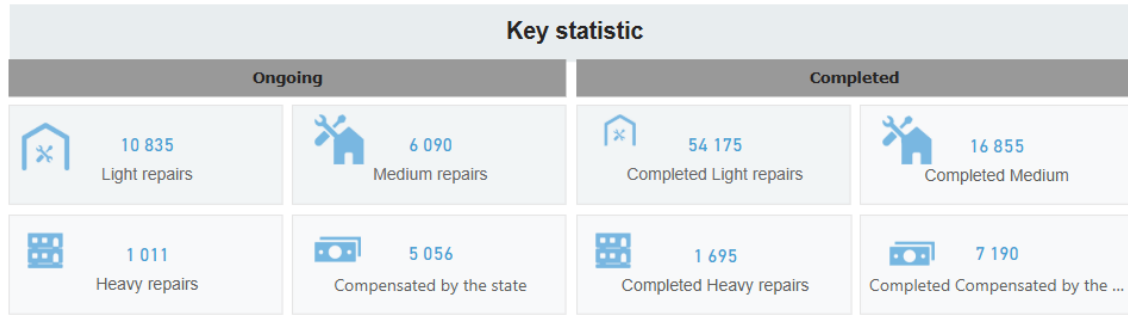
Start Date
Yci

Completion Date
Yci

Building Type
Yci

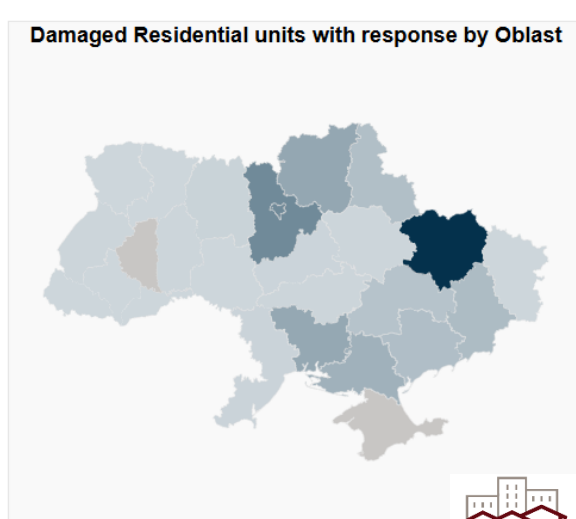
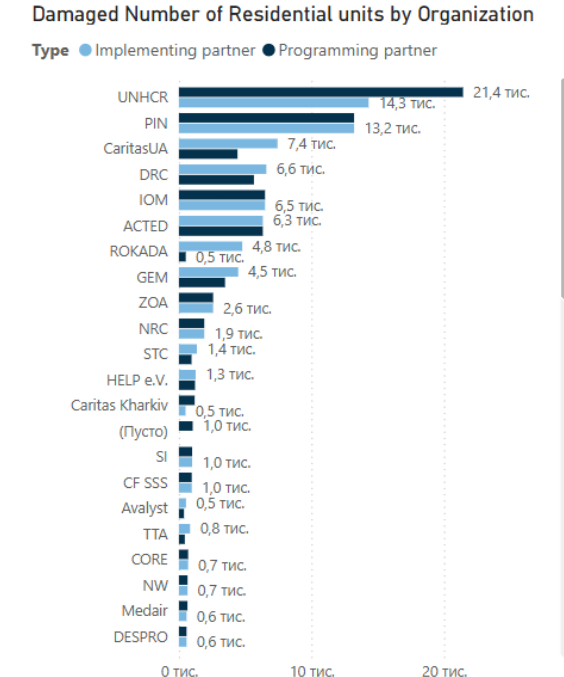
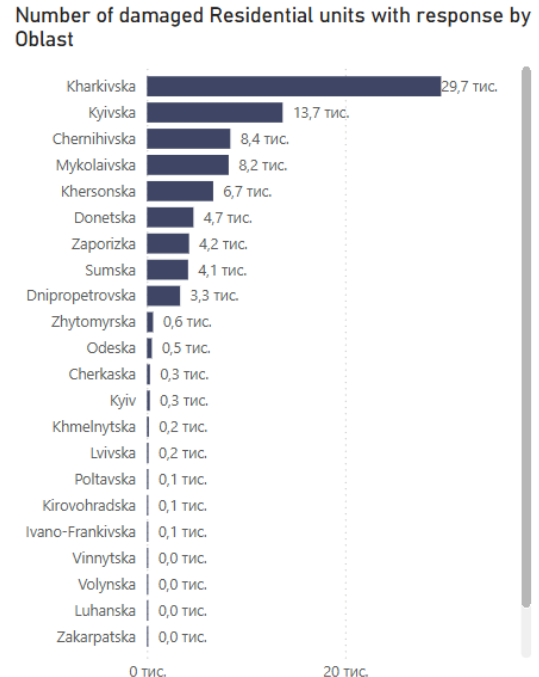
Address status
Yci

Activity status
Yci



Key Figures

- 85 520**
Residential units
- 102 907**
Activities
- 61 658**
Assessments



Users

- 15**
UN Agency
- 58**
NGO
- 95**
International NGO
- 164**
Total Users
- 154**
Active Users



SIDAR Ukraine Damage & Response Overview

Filters

Hub
Yci

Oblast
Yci

Raion
Yci

Hromada
Yci

Settlement
Yci

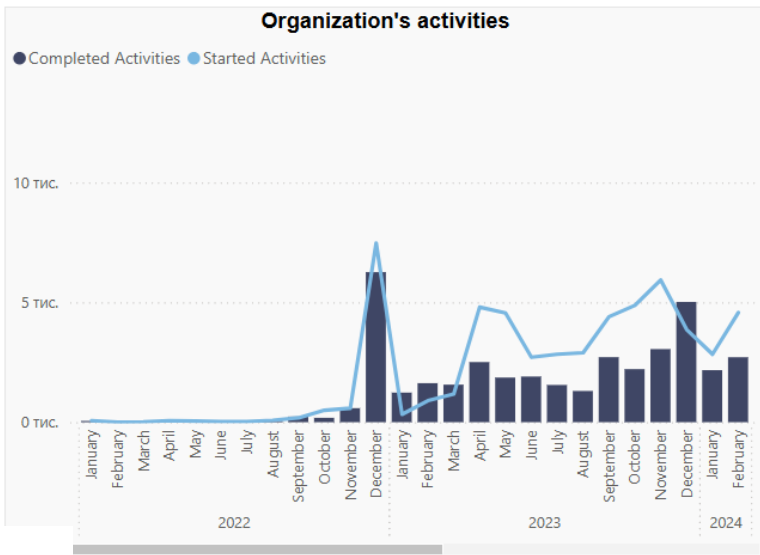
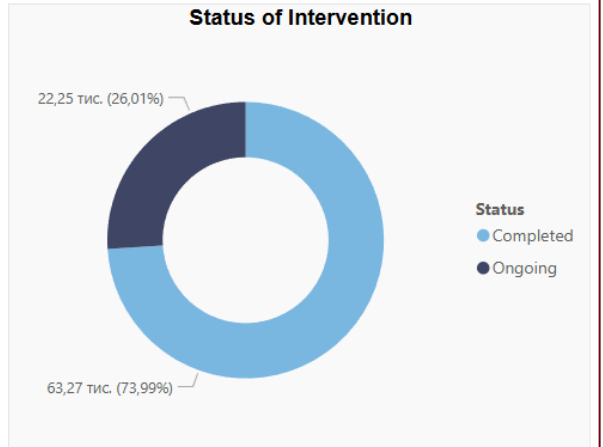
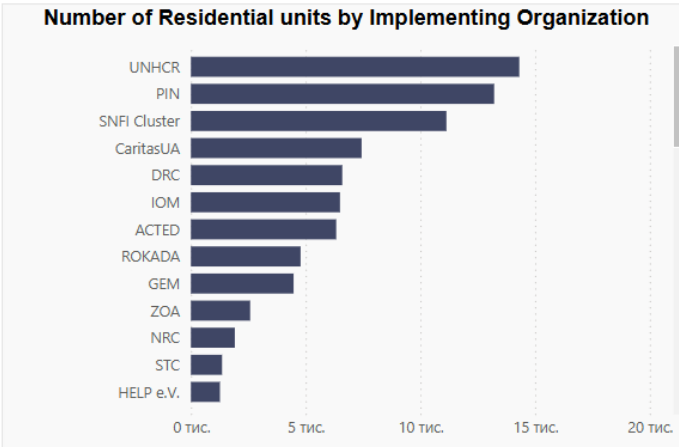
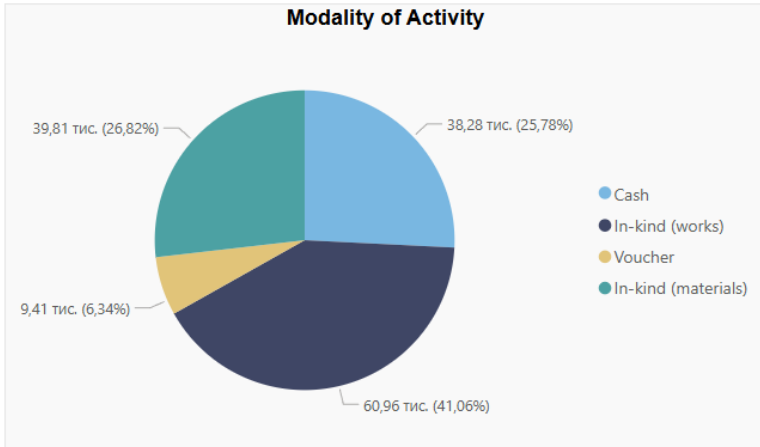
Start Date
Yci

Completion Date
Yci

Building Type
Yci

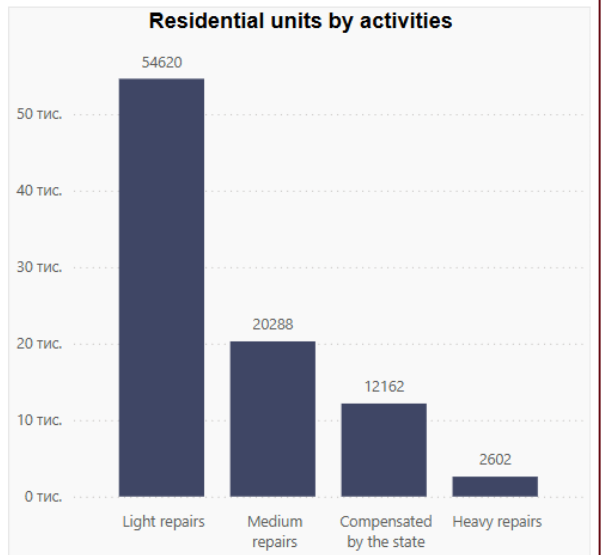
Address status
Yci

Activity status
Yci



Organization's ongoing activities

Oblast	Settlement	Number of organizations	Number of Residential units	Organizations
Cherkaska	Cherkasy	3	4	UNHCR, GEM, URCS
Cherkaska	Chervona Sloboda	1	11	URCS
Cherkaska	Khrystynivka	1	1	GEM
Cherkaska	Mankivka	1	1	GEM
Cherkaska	Nemorozh	1	1	URCS
Cherkaska	Smila	1	103	GEM
Cherkaska	Uman	1	56	GEM
Cherkaska	Yablunivka	1	2	URCS
Chernihivska	Anysiv	1	1	GEM
Chernihivska	Avdiivka	2	2	DRC, ROKADA
Chernihivska	Bakhmach	1	1	ZOA
Chernihivska	Baklanova Muraviika	3	18	SNFI Cluster, PIN, ROKADA
Chernihivska	Budy			
Chernihivska	Chemer	1	1	ROKADA
Chernihivska	Chernatske	1	1	ROKADA
Chernihivska	Chernihiv	5	264	DRC, PIN, ROKADA, GEM, PAH



Thank you!



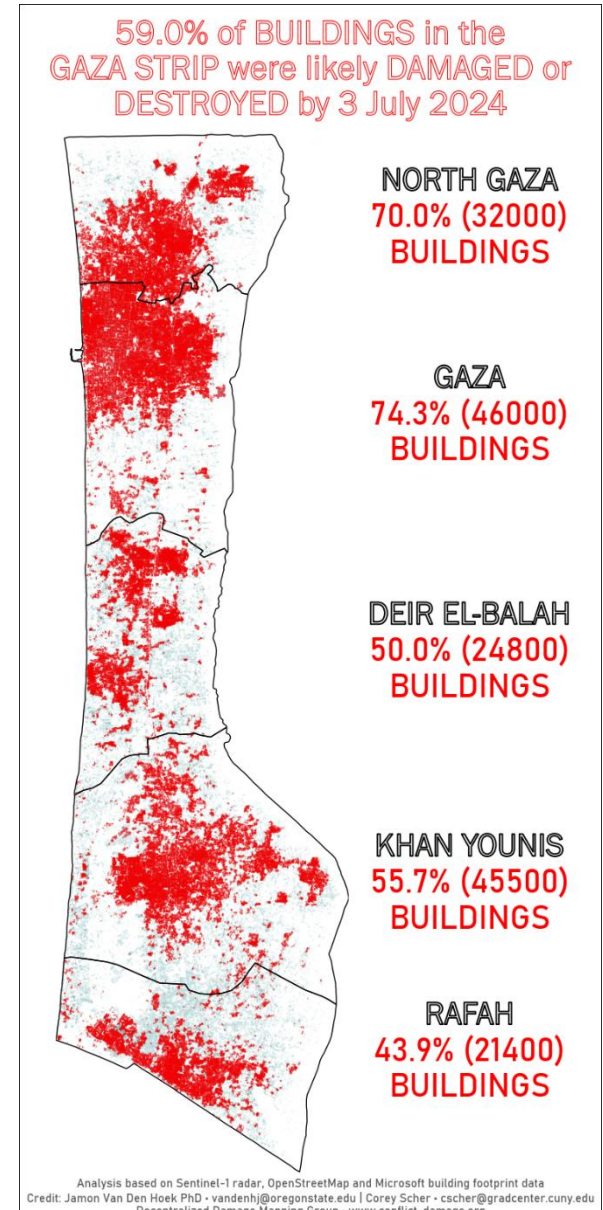
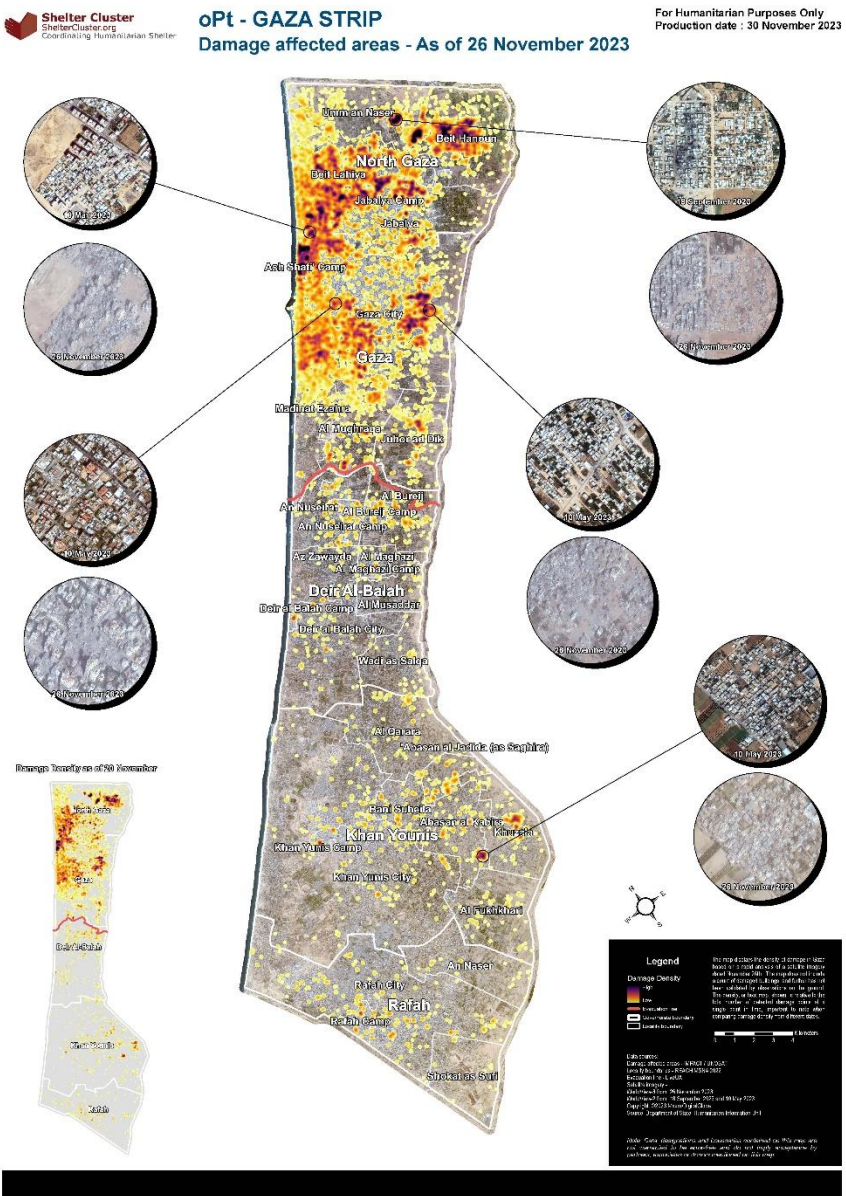
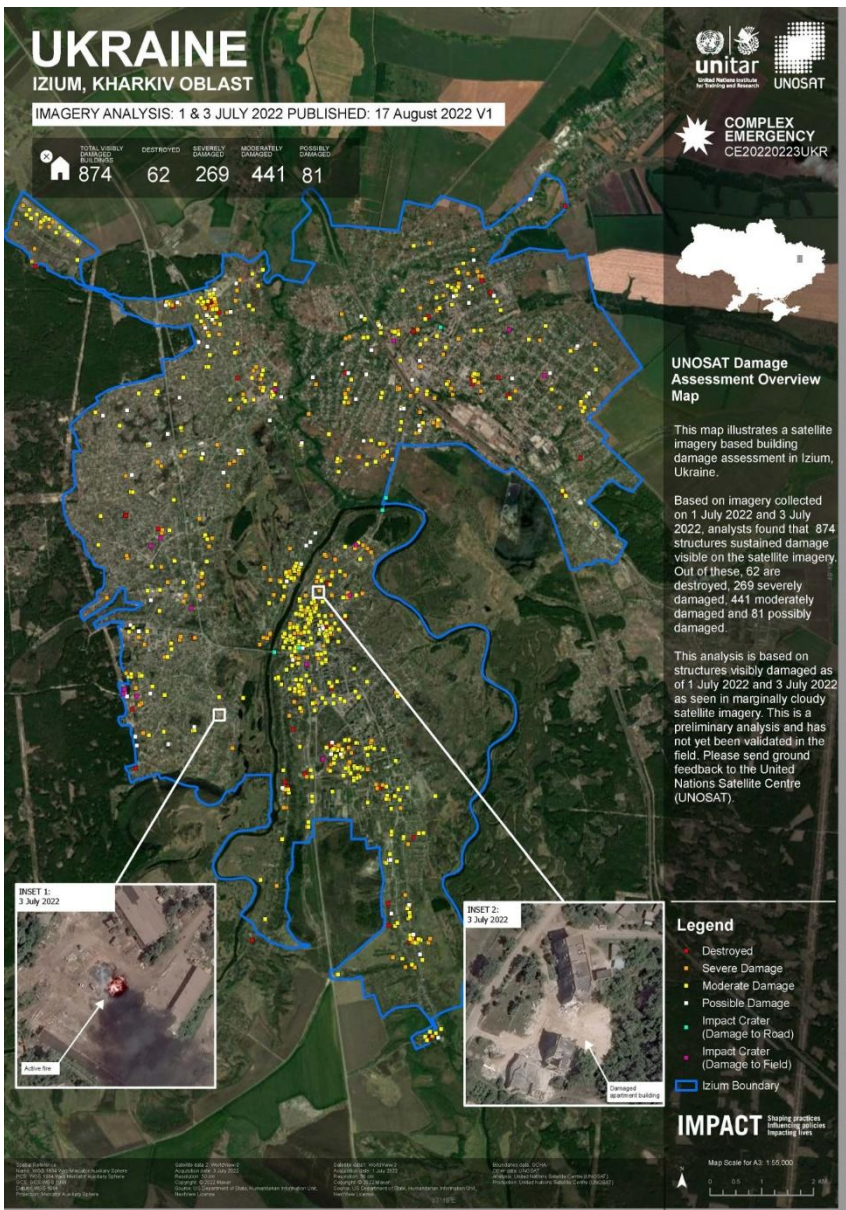
Rapid damage assessment in post-disaster and conflict settings

IMPACT INITIATIVES



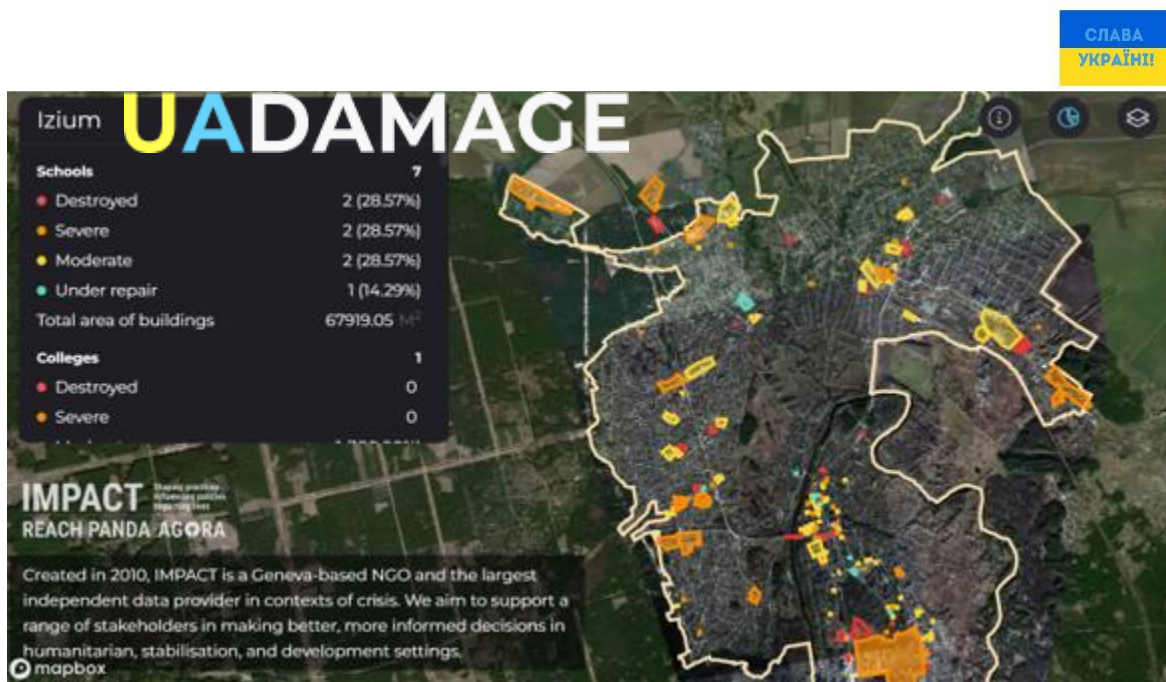
Matt Wencel
Senior Manager GIS &
Remote Sensing

Approaches – optical imagery and radar

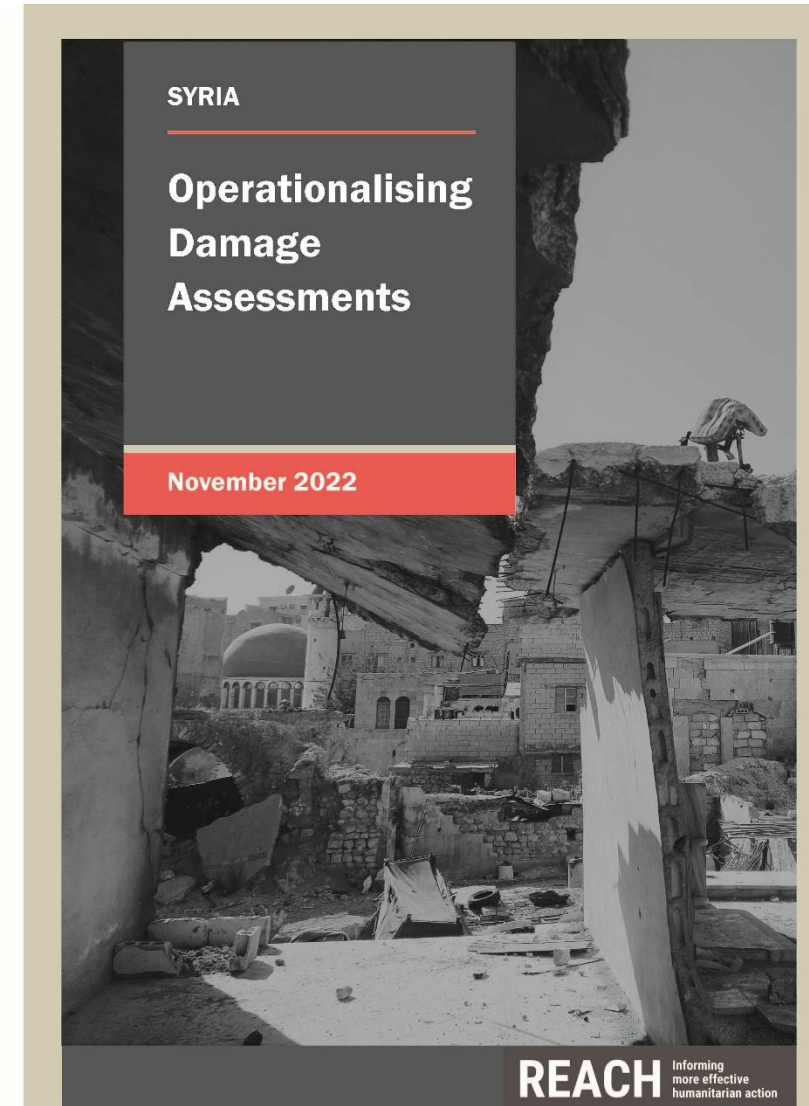
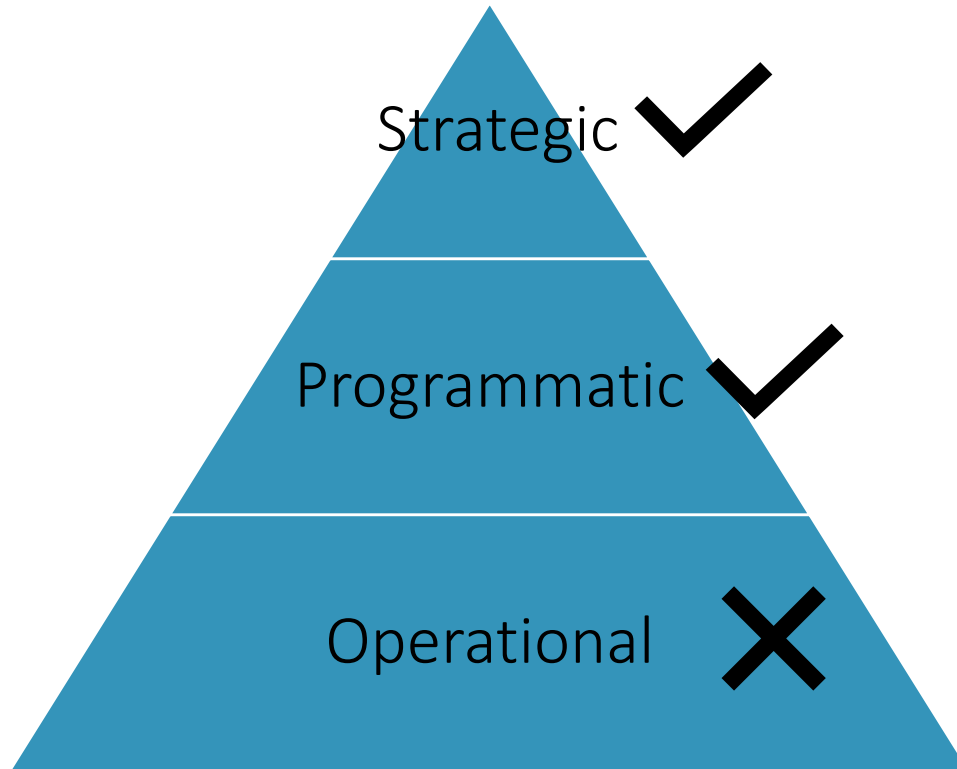




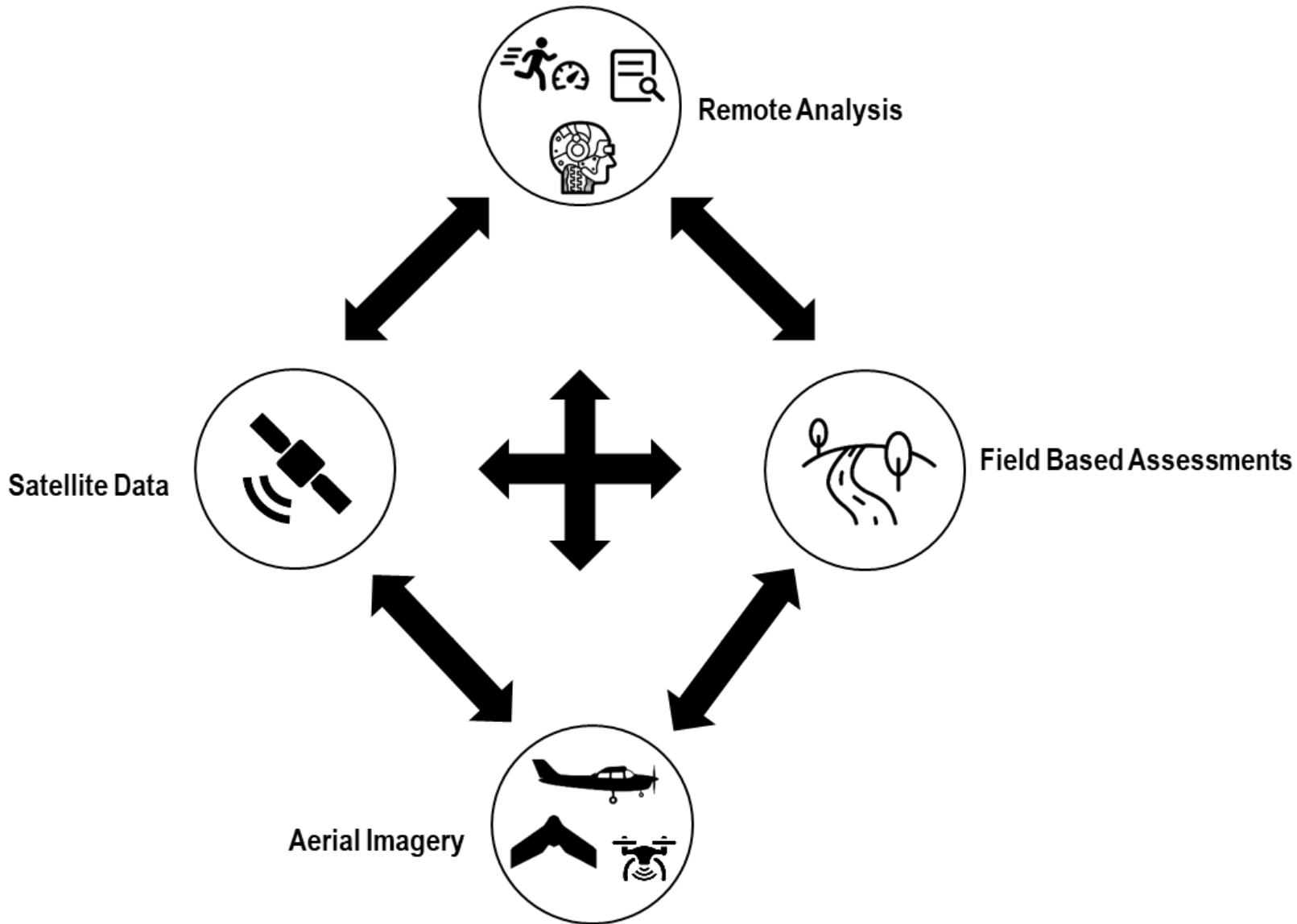
AI, machine learning and automation



But what are we trying to inform with this analysis?



Are we striking the right balance?





Rapid Damage and Detailed Repair Housing Assessments - pros and cons

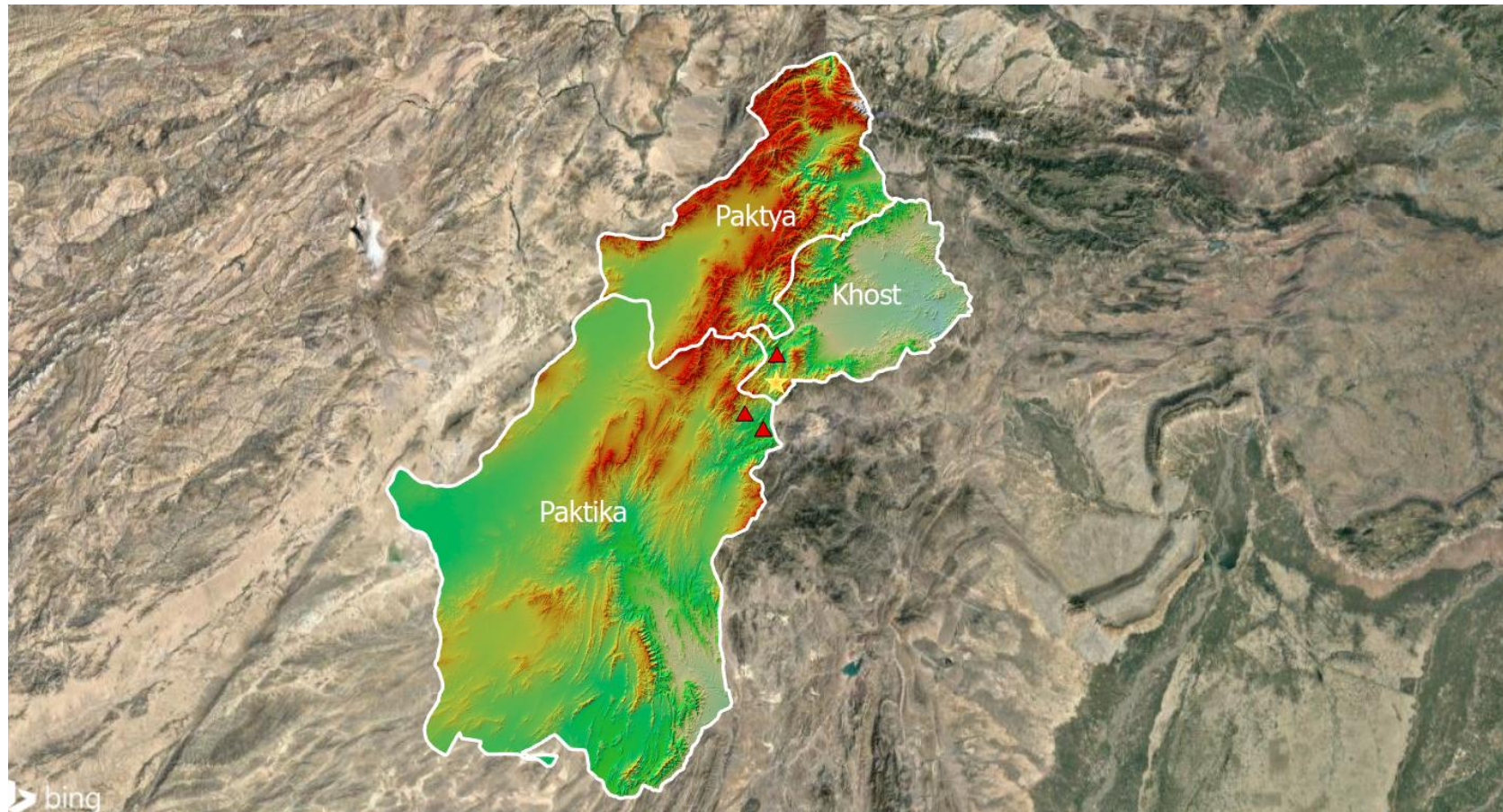
MIYAMOTO INTERNATIONAL



Dr. H. Kit Miyamoto
CEO & Humanitarian
Coordinator

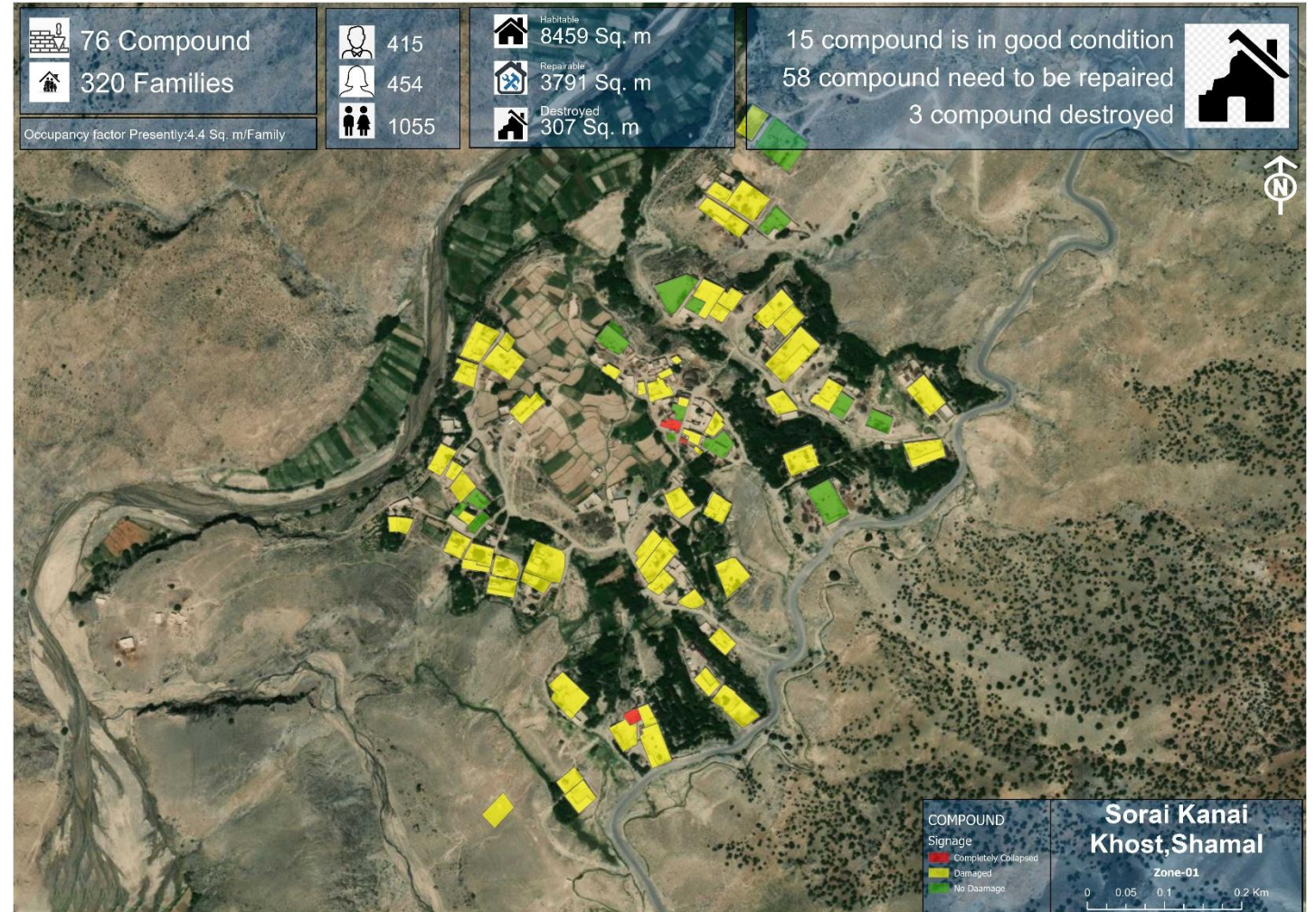
2022 Afghanistan Earthquake

This event caused 100,000 people homeless and are exposed to severe winter.



Remote/Sample Habitability Assessment Results

- Collapse(Red) 17%
- Repairable(Yellow) 51%
- Habitable(Green) 32%



Vernacular clay construction







Vernacular construction

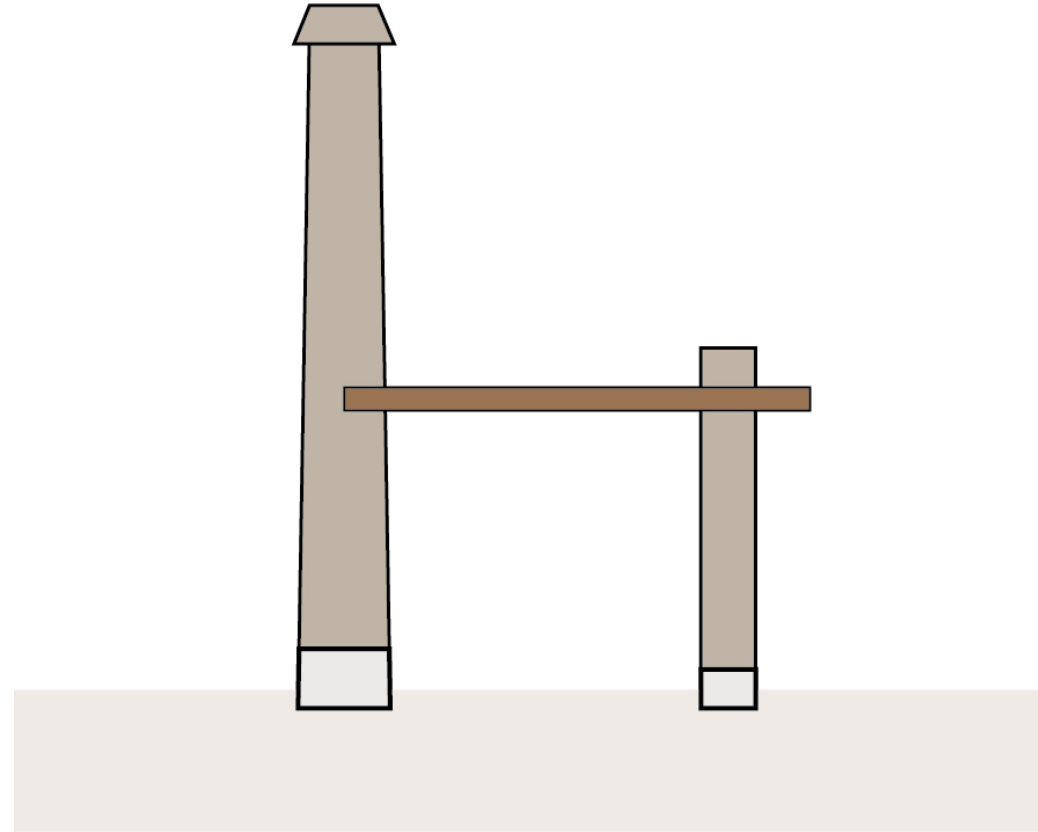
Cohesion Test (cigar test)



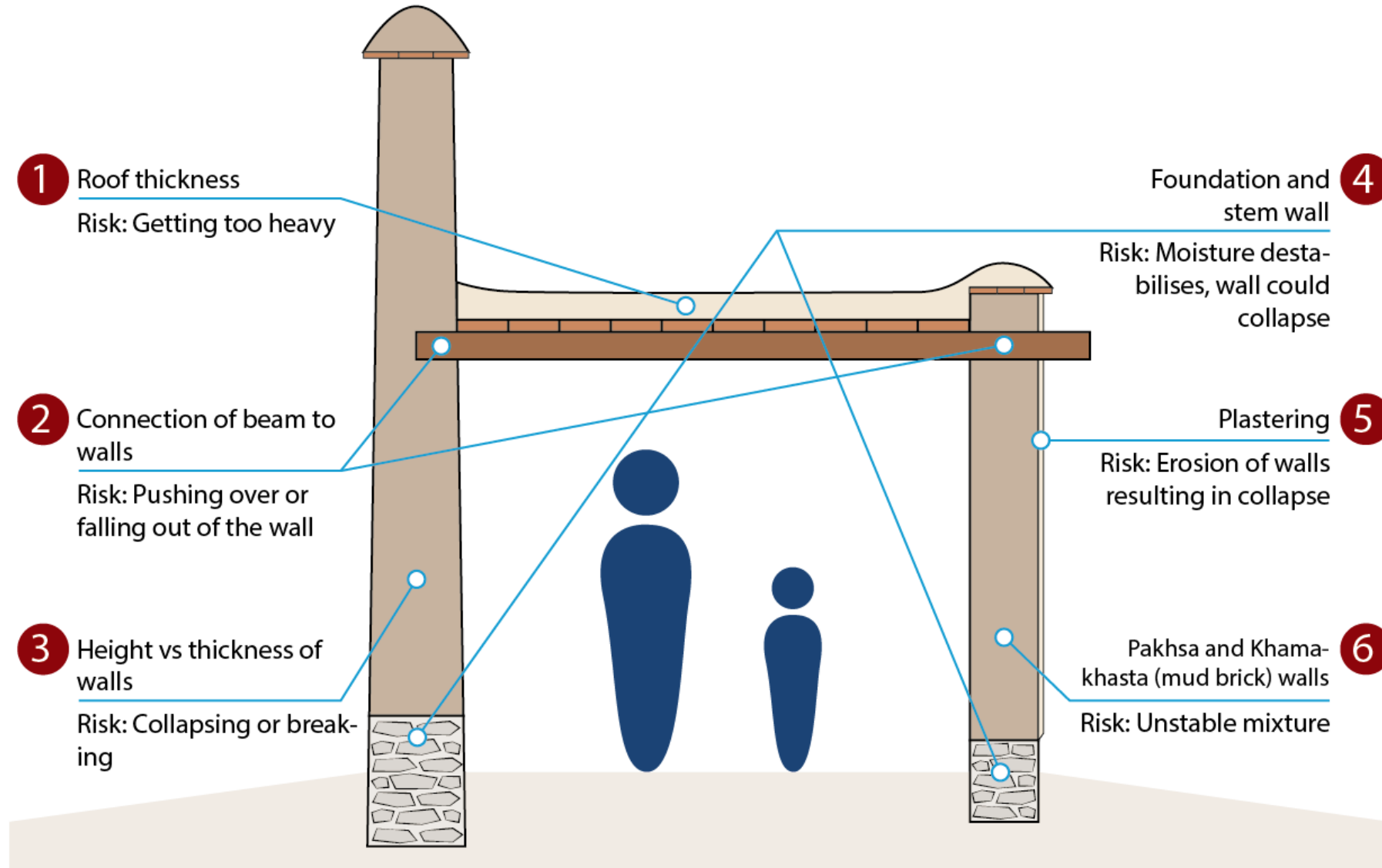
Findings

The traditional housing vernacular is unique and has evolved to suit the:

- Specific seismic risk in the area,
- Available materials,
- Harsh climate
- Local culture



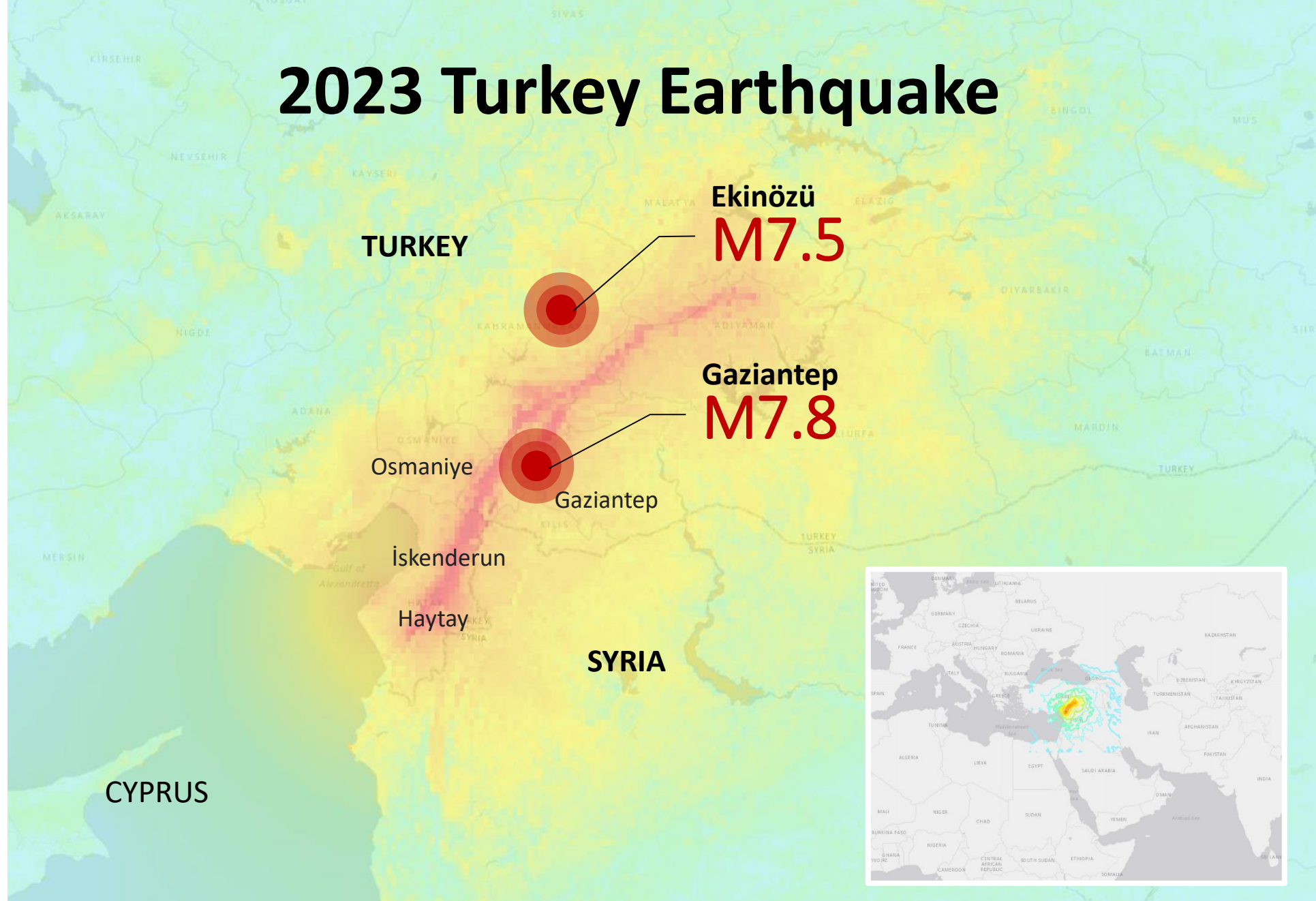
Key Technical Messages







2023 Turkey Earthquake

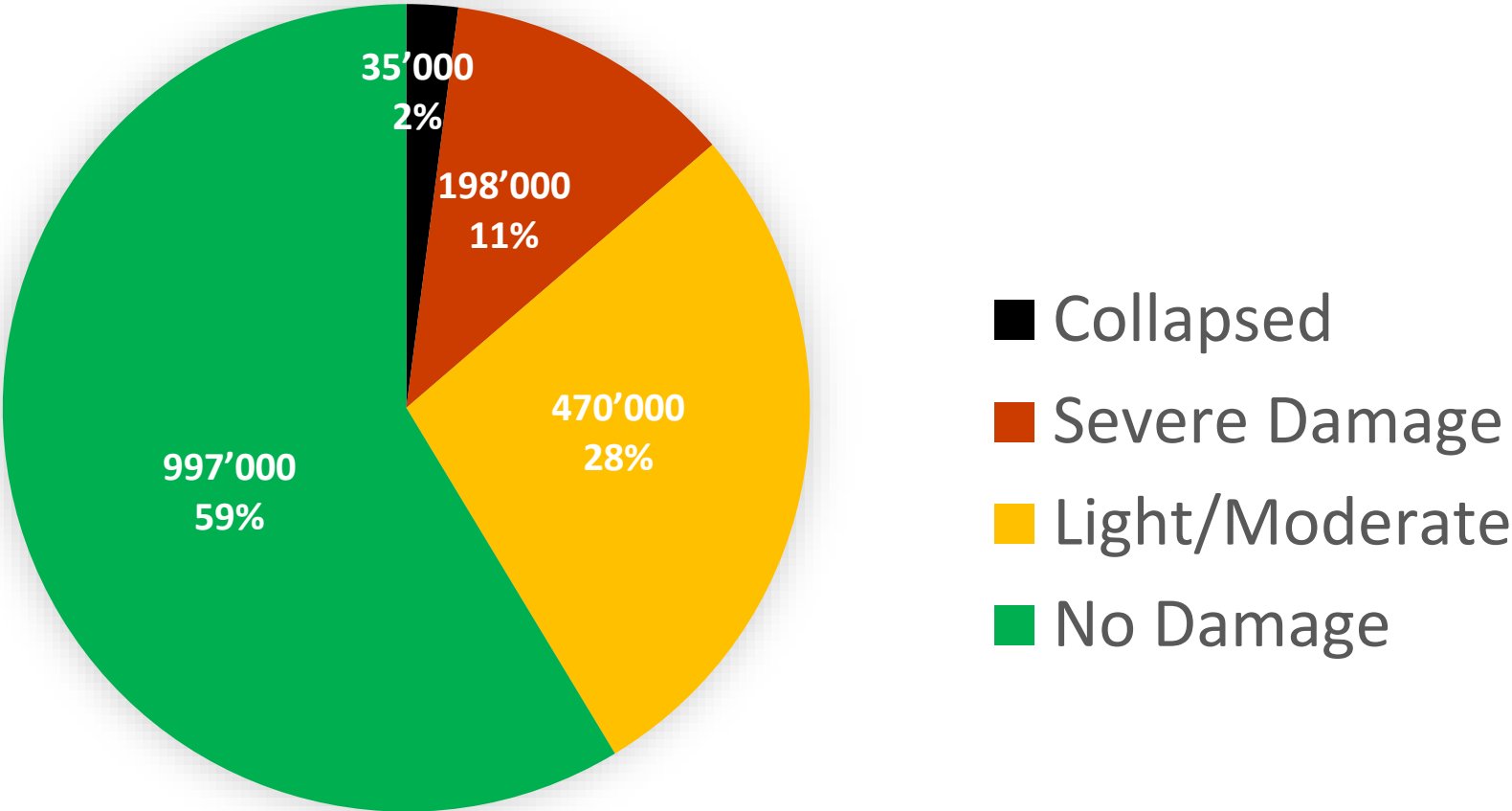




Impact

- Affected 14M people
- 51,000 fatalities, 107,000 injuries
- 4.1M displaced people
- \$104 billion direct damage (9% of GDP)

Total affected buildings: 1,700,000







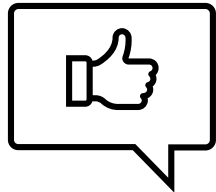
Rapid Repair Assessment and Communication Program



37,000+
Family units
**assessed and
communicated**

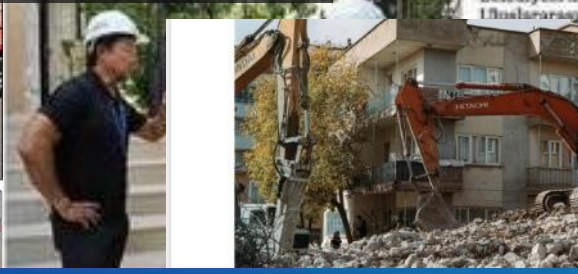


150,000+
people **in-
person
communication**



2.4 M+
people reached via
Social Media

Media Coverage



Büyükşehir Belediyesi, Uluslararası Miyamoto - Protek Firması ile önemli bir iş birliği yaparak, depremlerde hasar alan evler için kolları sıvadı. Coğrafi bilgi sistemi temelli uygulama üzerinden Gaziantep şehir merkezindeki az ve orta hasarlı yapılar denetlenerek, 50 bin hanenin güvenli bir şekilde eve dönüş süreçleri hızlandırılması hedefleniyor. Gaziantep'te hasarlı evler Türk ve Japon

NEW TONIGHT
DEATH TOLL CLIMBS TO MORE THAN 3,800 AFTER 7.8 EARTHQUAKE DEVASTATES TURKEY AND SYRIA
LIVE
CNN
8:07 PM ET

Rebuilding a sense of safety after earthquakes, floods or war is as important as reconstructing the buildings themselves, says Kit Miyamoto, a Japanese-American structural engineer who specialises in disaster response. This year alone he has worked in Turkey, Ukraine, Morocco and Afghanistan, and is planning a mission to areas of Libya that were affected by catastrophic flooding in September. "People want to come back to normalcy but also many might be scared, even if buildings are safe," says Miyamoto. "That puts tremendous stress on the displacement camps and it's important

1. Post-earthquake damage in Elbistan, Turkey
2. The aftermath of February's earthquake in Antalya
3. Structural engineers



Building with **medium** damage



New apartment **built by GoT** outside the city



Container city in Osmaniye province



Rapid Damage Assessment Beirut Blast 2020

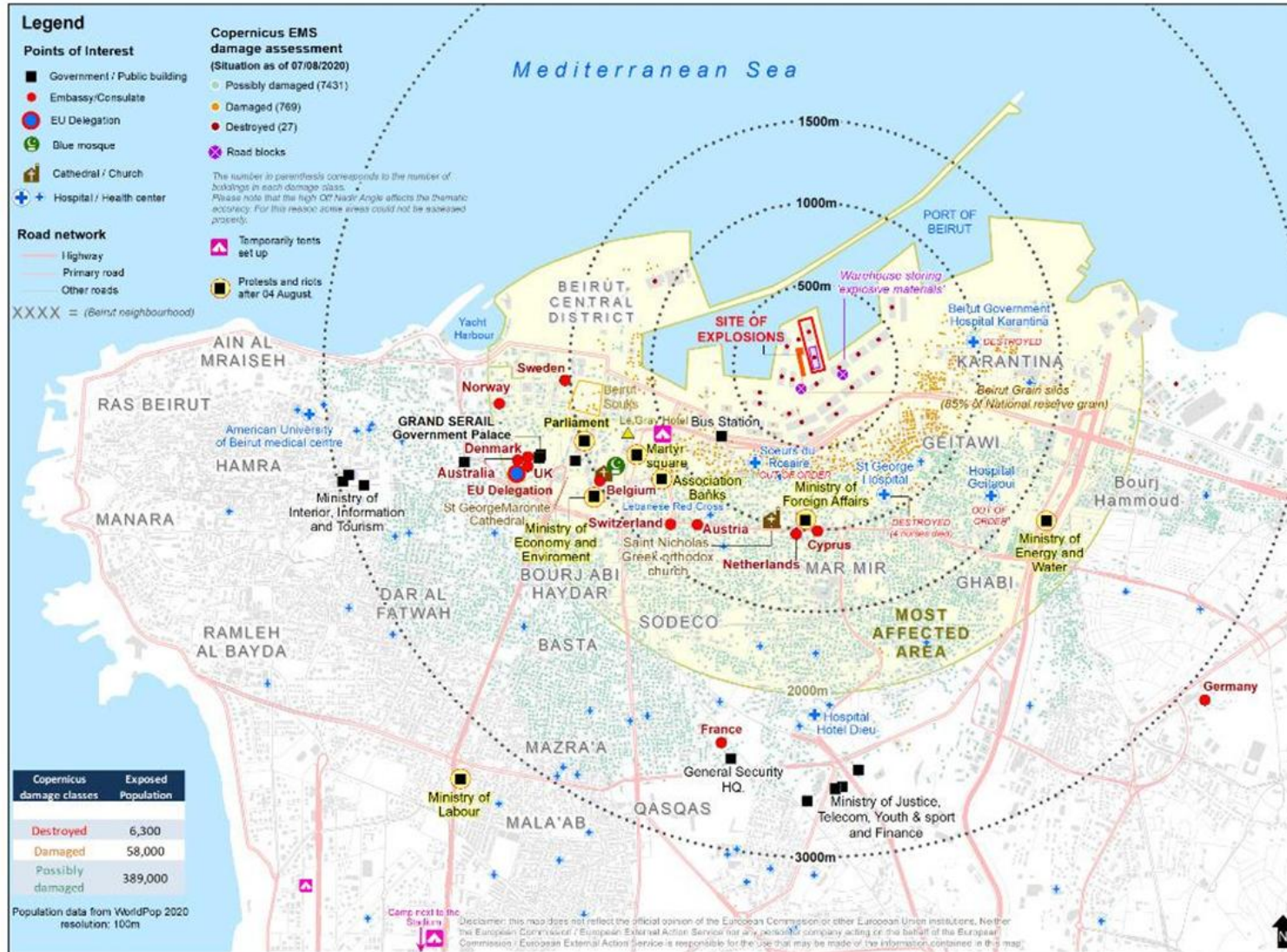
SWISS HUMANITARIAN AID UNIT / SET - SDC



Regina Wenk
Structural civil engineer

Beirut explosions map: 04 August 2020

Feedback info to be sent to: JRC-science4peace@ec.europa.eu



Map ID: S4P1295
Production Date: 11 August 2020
Map Catalogue: <https://science4peace.jrc.ec.europa.eu>

Data source:
ESRI, rtytimes, wikimapia, Google maps
OpenStreetMap contributors
Copernicus Emergency Mapping Service (CEMS)

© European Commission, 2020. The maps have been prepared/produced by the European Commission, Joint Research Center, with the financial support of the "Instrument contributing to Stability and Peace". The maps are stored in a restricted access portal and unauthorized use is not permitted. Distribution is not permitted unless explicitly stated. Map Scale: 1:28,000





Rapid Assessment

Survey (Raumerkundung)

The aim of the survey is to get a rough idea of the damage as quickly as possible and to obtain missing information about the area. Depending on the size of the area, sectors are formed and explored with several teams. Through close cooperation with local and international disaster management authorities and other teams, the exploration effort should be kept to a minimum.

The results are summarized in a report. ArcGIS Survey 123 was used as a data collection tool. The matrix of the data was created by the GIS managers in collaboration with the structural engineers of the rescue chain. The results were continuously transferred to a situation map. The color coding facilitates interpretation and provides an overview of the information.

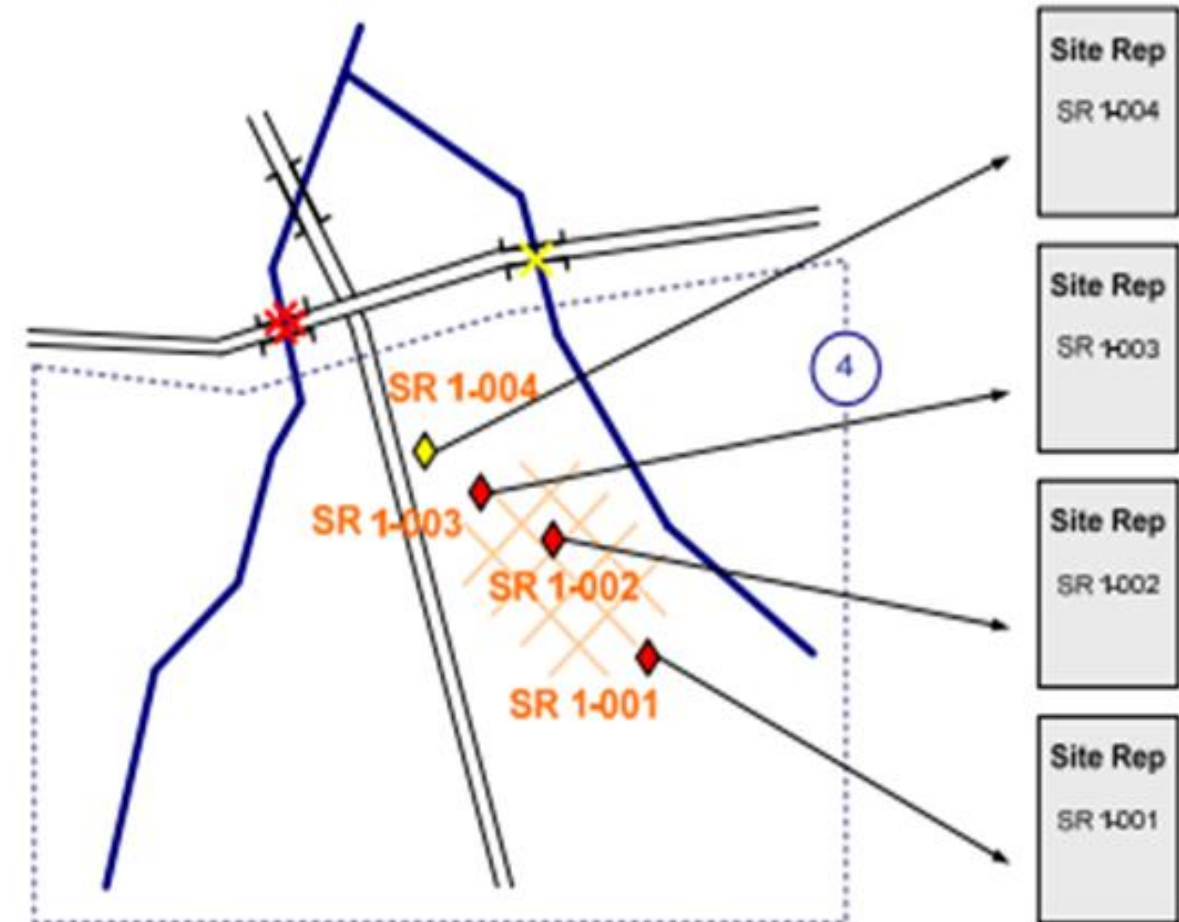
no damage	green	
damaged/partially damaged	yellow	
destroyed area	red	

Target Investigation (Zielerkundung)

During the target investigation, all relevant information is collected for the work at the incident site (object). The structured information should facilitate the rapid deployment of suitable rescue teams at the incident sites. A report is created for each spatially limited incident site (house, block, etc.).

Possible content of the incident assessment form (incident site report):






- Site identification number
- GPS position / address (if available)
- Use of the building (apartment, office building, ...)
- Type of development (industrial, residential, commercial, administrative, ...);
- Degree of destruction in damage classes (1, 2, 3, 4, 5)
- triage information (triage tree, in accordance with INSARAG guidelines)
- hazards and risks (HAZMAT)
- type of construction/material (brick, wood, concrete, reinforced concrete, adobe, steel, etc.)
- missing persons/potential victims (number)
- time and date of the reconnaissance/reconnaissance team
- contacts (relatives)
- photos, sketches (floor plan)
- floors
- subsoil/foundation
- accessibility
- rescue teams already on the scene and their work status
- need for heavy clearing equipment (crane, bulldozer, etc.). A site report is created for each site.








Evaluation of green, yellow and red



ArcGIS Survey 123

Classification of damage to masonry buildings	
	Grade 1: Negligible to slight damage (no structural damage, slight non-structural damage) Hair-line cracks in very few walls. Fall of small pieces of plaster only. Fall of loose stones from upper parts of buildings in very few cases.
	Grade 2: Moderate damage (slight structural damage, moderate non-structural damage) Cracks in many walls. Fall of fairly large pieces of plaster. Partial collapse of chimneys.
	Grade 3: Substantial to heavy damage (moderate structural damage, heavy non-structural damage) Large and extensive cracks in most walls. Roof tiles detach. Chimneys fracture at the roof line; failure of individual non-structural elements (partitions, gable walls).
	Grade 4: Very heavy damage (heavy structural damage, very heavy non-structural damage) Serious failure of walls; partial structural failure of roofs and floors.
	Grade 5: Destruction (very heavy structural damage) Total or near total collapse.

Classification of damage to buildings of reinforced concrete	
	Grade 1: Negligible to slight damage (no structural damage, slight non-structural damage) Fine cracks in plaster over frame members or in walls at the base. Fine cracks in partitions and infills.
	Grade 2: Moderate damage (slight structural damage, moderate non-structural damage) Cracks in columns and beams of frames and in structural walls. Cracks in partition and infill walls; fall of brittle cladding and plaster. Falling masonry from the joints of wall panels.
	Grade 3: Substantial to heavy damage (moderate structural damage, heavy non-structural damage) Cracks in columns and beam-column joints of frames at the base and at joints of coupled walls. Spalling of concrete cover, buckling of reinforced rods. Large cracks in partition and infill walls, failure of individual infill panels.
	Grade 4: Very heavy damage (heavy structural damage, very heavy non-structural damage) Large cracks in structural elements with compression failure of concrete and fracture of rebars; bond failure of beam reinforced bars; tilting of columns. Collapse of a few columns or of a single upper floor.
	Grade 5: Destruction (very heavy structural damage) Collapse of ground floor or parts (e.g. wings) of buildings.

Beirut Municipality Rapid Assessment Form

التقييم السريع لبلدية بيروت
مستشفى الهندسة - دائرة المسان

كشف على أضرار انفجار العرفا

رقم المقار	المنطقة المقاربه	الشارع	المهندس المسؤول	الشركة المتطوعه	تاريخ الكشف

وضع البناء:
انهيار بالكامل

تأثير انفجار جزئياً بشكل خطير أعلى السلامة العامة يتوجب إخلاؤه
تأثير انفجار جزئياً بشكل خطير أعلى السلامة العامة لا يتوجب إخلاؤه

وأجهت البناء متضررة

الكمية التقريبية

زجاج
المينيوم وزجاج
ابواب جرارة
شرفات
تلبس
جدران خارجية
تكنة قرميد
مختلف

طابق لرابي
صور هرقلة
خرقطة موقع
ملاحظات عامة

الرجاء وضع علامة لاني المربع المطلوب

Decision: GREEN (inspected) YELLOW (restricted use) RED (unsafe/evacuate)

Describe restrictions: _____

توقيع المهندس المتطوع _____
توقيع المهندس المسؤول (الإدارة البلدية) _____

رئيس دائرة المسان: _____
مهندس فحص أضرار العرفا: _____
C.C.







Household and Building Damage Assessment (HBDA): Actionable Insights for Effective Post-Crisis Recovery

United Nations Development Programme



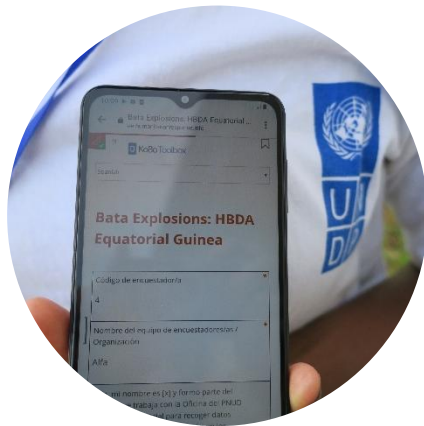
Arnold Njogu
Digital Assessments
Analyst



The HBDA

- Quick and efficient digital toolkit employed post disasters
- Flexible modular approach
- Adaptable to different crisis contexts
- Collects indicators on building and livelihood impact
- Informs reconstruction and recovery programming

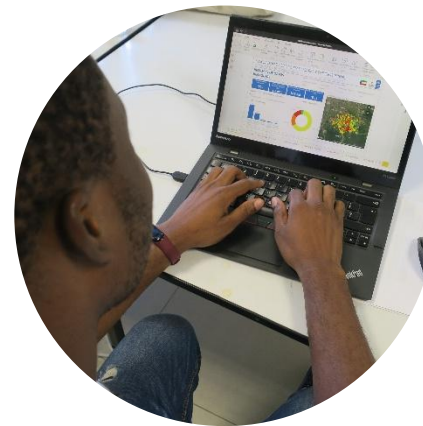
HBDA phases



**Situational
analysis**



**Field work
coordination**



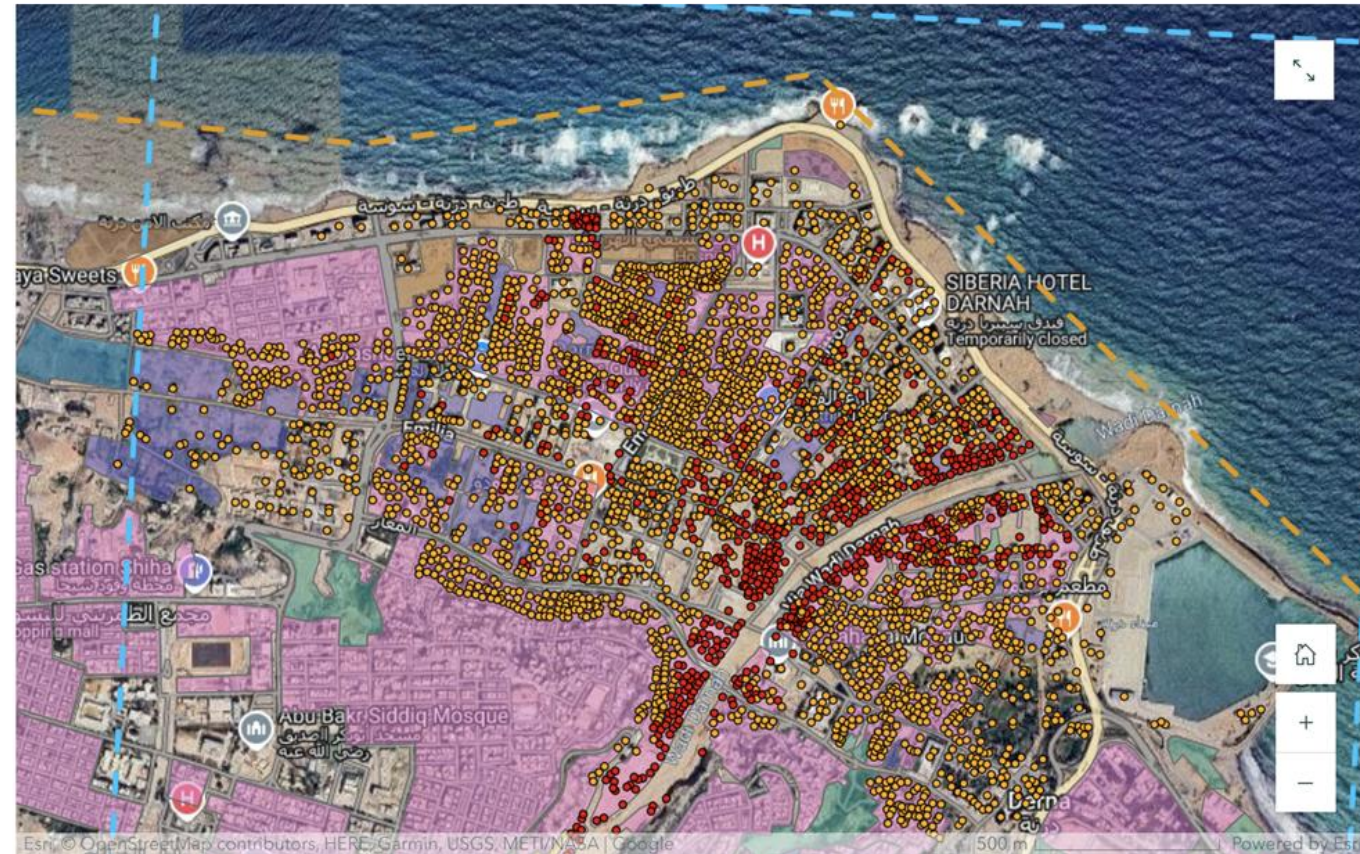
**Analysis and
visualization**



**Recovery
programming**

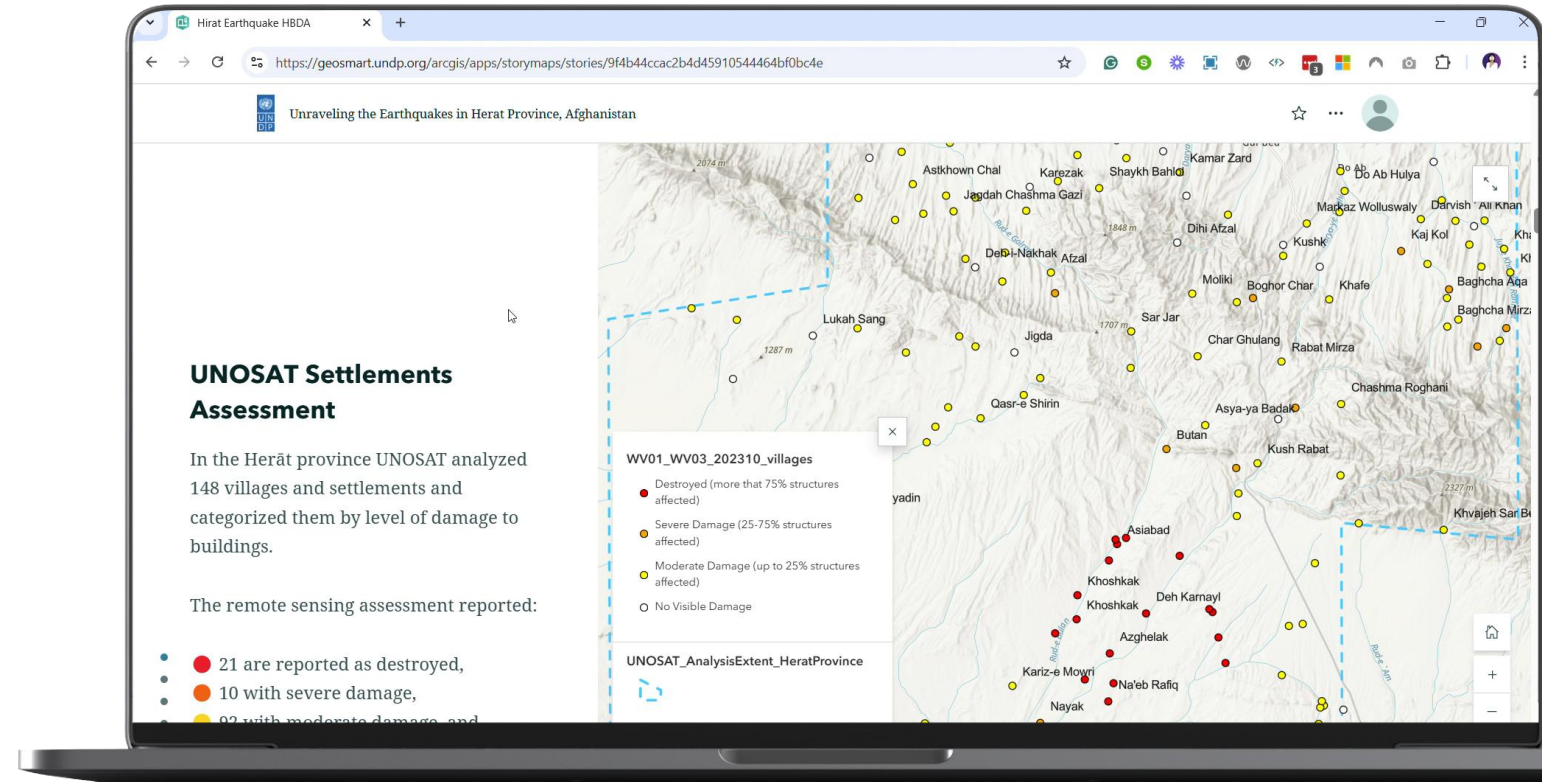
SITUATIONAL ANALYSIS

- Incorporates wide range of available secondary data to inform on geographic, demographic, and sectoral scope of assessments
- Government records such as census data for demographic sampling
- Flash updates by government and response teams for analysis extent
- Satellite imagery for spatial sampling



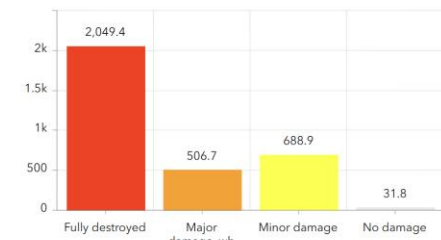
Spatial sampling

- Leverage **satellite imagery analysis** partners such as UNOSAT for preliminary damage extents or analysis.
- Use building footprints or small geographic units as sampling frames.
- Stratified or probability proportional sampling to ensure **representativeness**.



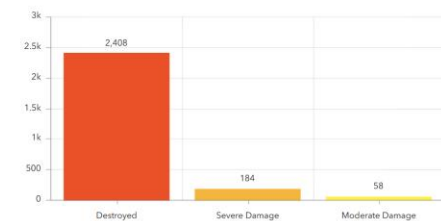


Number of damaged buildings estimated from HBDA data collection in Zindajan

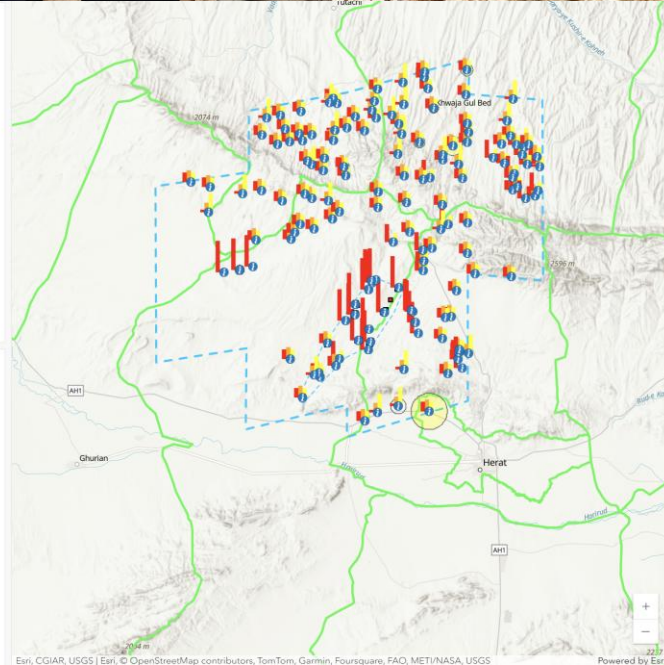


UNDP data

Number of damaged buildings in the Zindajan district (17 settlements only)



UNOSAT analysis



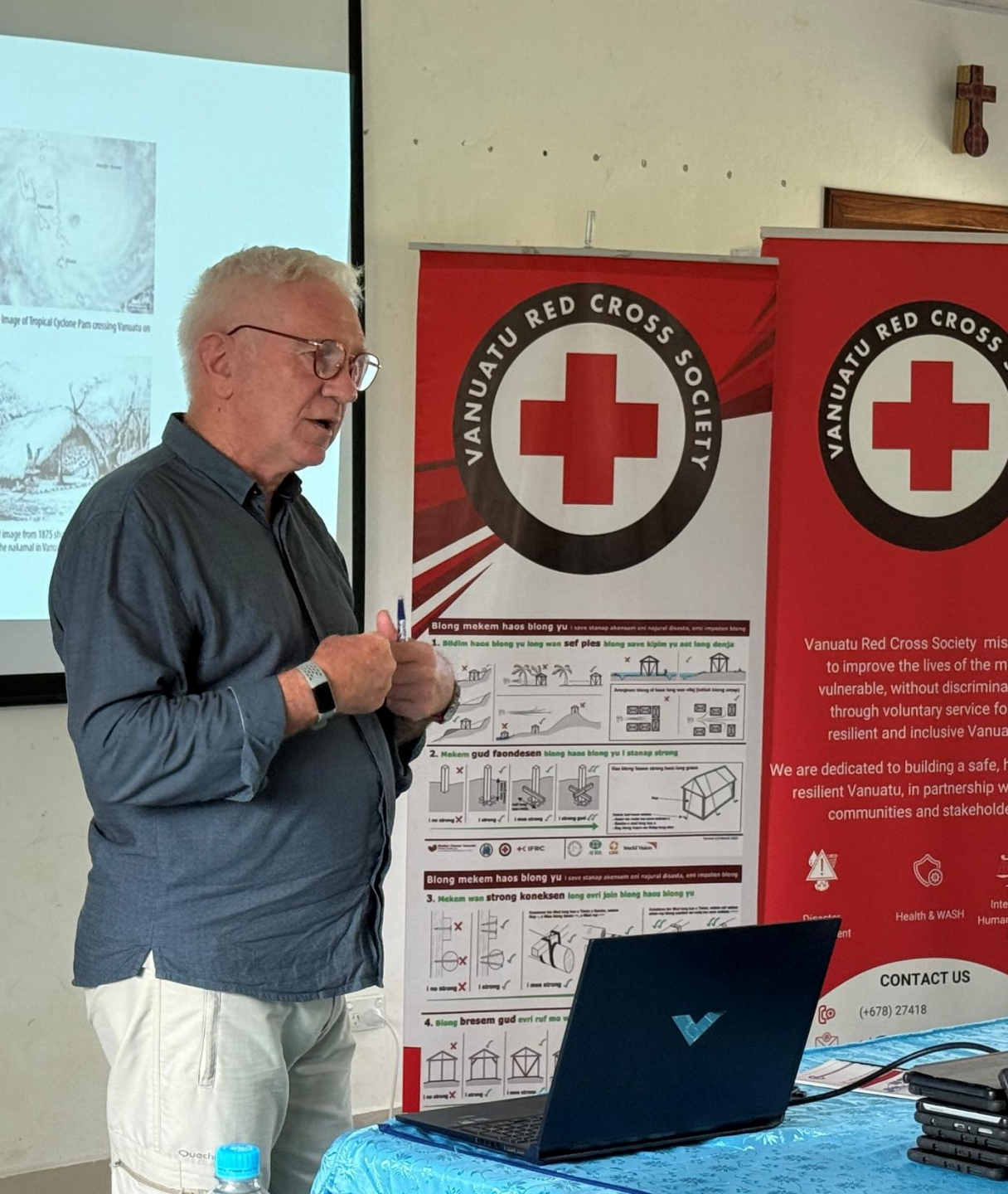
Remote sensing and HBDA in Afghanistan

Following a series of devastating earthquakes that struck Herat Province in western Afghanistan starting from October 7, 2023, the Assessments and Digital Solutions Team was onboarded to support remote sensing and field assessment of the damages through an HBDA. About 2000 observations between residential buildings, households, and infrastructures were assessed. Findings were used to provide targeted support (housing, sanitation, energy, and food) to as many families as possible.

Read more how the findings were used in this [link](#) and [storymap](#).

Coordination and field work

- **Government-Led Initiatives:** Involving national institutes of statistics or disaster management authorities to support data collection and analysis efforts.
- **Multi-Stakeholder Collaboration:** Partnering with UN agencies, Shelter Cluster, Red Cross, and local NGOs to ensure comprehensive and accurate data gathering.
- **Community-Driven Coordination:** Engaging community leaders at the village level to ensure precise identification of households and buildings while fostering trust with respondents.
- **Academic and Technical Expertise:** Utilizing academic institutions and engineering societies to address complex engineering queries and support data accuracy.



Analysis and visualization



Damage categorization



Reconstruction &
demolition cost estimation



Debris estimation



Reconstruction

As part of the stabilization programme in Mozambique’s previously conflict affected areas, a HBDA was implemented to evaluate operational status and damage levels to public infrastructure, design rehabilitation works and inform government stabilization planning. This has informed rehabilitation works for over 40 public infrastructure including 64 km road network, bridges, 3 airfields, waterpoints, health centers and schools. The HBDA also provided a baseline for monitoring of reconstruction activities.

Infrastructure Damage Assessment

Cabo Delgado – Mozambique
August 2022



0. Overview
1. Baseline Overview
2. Reconstruction/ Rehabilitation Status

Locations of Assessed Districts in Cabo-Delgado

Click on + icon to drill down administrative posts

District/ Administrative Post	Total
Mocimboa da Praia	609
Quissanga	465
Palma	197
Macomia	97
Nacoluta	4
Total	1372

The assessment only focuses on public infrastructure located within 4 Districts of Cabo-Delgado province as shown in the above table across 7 administrative posts. It has captured information for a total of 1372 infrastructure so far.

Right click on any point location and select drill through to see infrastructure details

Rehabilitation Phase: ● Completed ● Not started



Type and Operational Status of Assessed Infrastructure

● Not operational ● Partially operational ● Fully operational

Infrastructure Type	Not operational	Partially operational	Fully operational
Residential/Dwelling	614	84	654
Market/ Commercial facilities	199	1	199
Office	25	1	25
Educational facility	1	1	1
Health facility	1	1	1
Police/Fire Department Station	1	1	1
Centro de Formação	1	1	1

Majority of the infrastructure which have been assessed are residential buildings mostly for civil servants. Out of all 1372 infrastructure, 1363 are not operational, 127 are partially operational while 86 are fully operational.

Overall Infrastructure Damage Classification

Damage Classification	Count
No Damage	8
Fully Damaged	379
Partially Damaged	385



A 3 tier overall damage classification for the assessed infrastructure has been adopted mainly based on the damage sustained on the roofs and walls; if roofs and walls are completely destroyed, the infrastructure is considered fully damaged. While majority of the infrastructure that are fully destroyed are not operational, some residential dwellings are still in use.



Debris management

- Equatorial Guinea HBDA highlighted a critical need for debris management, particularly within a 1km radius of the 2021 explosions.
- A total of 90 individuals, with 59% women and 41% men, participated in the initiative.
- Nearly 1,000 cubic meters of debris were successfully disposed of and recycled.

POLICY MAKING

- 2023 Honduras HBDA findings highlighted the urgent need for risk-aware municipal emergency plans.
- A roadmap was developed to strengthen the emergency management and response capacities of the Association of Municipalities of Honduras.
- The emergency and contingency plans respond to immediate needs and build resilience and enhance preparedness for future disasters.



Plenary Discussion Q & A



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Technical CoP & Toolkit on GSC website

[Link: Shelter Cluster website](#)

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INCLUSION OF PERSONS WITH DISABILITIES IN SHELTER PROGRAMMING	TECHNICAL	FREE ONLINE TRAINING ON COORDINATION	CLUSTER EVALUATIONS	RENTAL MARKETS	
SETTLEMENT APPROACHES IN URBAN AREAS	INFORMATION MANAGEMENT	VIDEOS		COMMUNICATION AND ADVOCACY	
SHELTER PROJECTS	ENVIRONMENT	CASH TRAININGS RELEVANT TO SHELTER PROGRAMMING		CLUSTER COORDINATION PERFORMANCE MONITORING	
PROTECTION FROM SEXUAL EXPLOITATION AND ABUSE WORKING GROUP	GENDER, DIVERSITY AND INCLUSION			GSC COORDINATION TOOLKIT	
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- Damage Assessment Resources
- Emergency and Temporary Shelter Technical Specification Resources
- Durable Permanent Shelter & Housing (Sustainable Solutions) Resources
- Good Construction Practices / Build Back Better (BBB) Resources
- NFI/EHI Technical Specification Resources
- Greener Shelter Resources
- Fire Safety Resources

[Link : Technical Community of Practice](#)

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Technical CoP and Toolkit GSC webpages

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CONCLUSION TAKE AWAY

A man in a yellow shirt and glasses is spraying a wall with a spray can. He is holding a can of spray paint in his right hand and a spray nozzle in his left hand. The wall is made of concrete and has some yellowish-green mold or algae on it. In the background, another man in a red shirt is standing and looking towards the camera. The scene is outdoors, possibly at a construction site or a maintenance area.

THANK YOU



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