



Earthquake Damage Assessment Khost, Paktika and Paktya Provinces Afghanistan

July 2022



Introduction

A 5.9 magnitude earthquake struck the south-eastern region of Afghanistan on 22 June 2022, causing widespread destruction, disruption to services, and loss of life, to an already highly vulnerable population across Khost, Paktika and Paktya provinces. As of 7 July 2022, an estimated total of 1,036 people were killed, and 2,924 were injured. At least 4,500 homes were damaged (fully or partially) in Paktika and Khost provinces.¹ Despite reports of severe damage to household shelters and public services, the full extent, and likely cost of the damage caused by the earthquake as well as aftershocks and repeated flash flooding in the weeks following, is still unclear.

In order to address this gap, REACH, in coordination with the ES/NFI Cluster² and the UNHCR,³ conducted an earthquake damage assessment in three south-eastern affected provinces. In order to understand the overall scope and impact of damage, and to inform advocacy and targeting for shelter repair and rebuilding in the affected area, REACH interviewed 1,130 households about their shelter damage, and 525 key informants on damage to service-related key infrastructures for education, health, and markets, more details in methodology note at the end of the document. Data was collected between 02-20 July 2022.

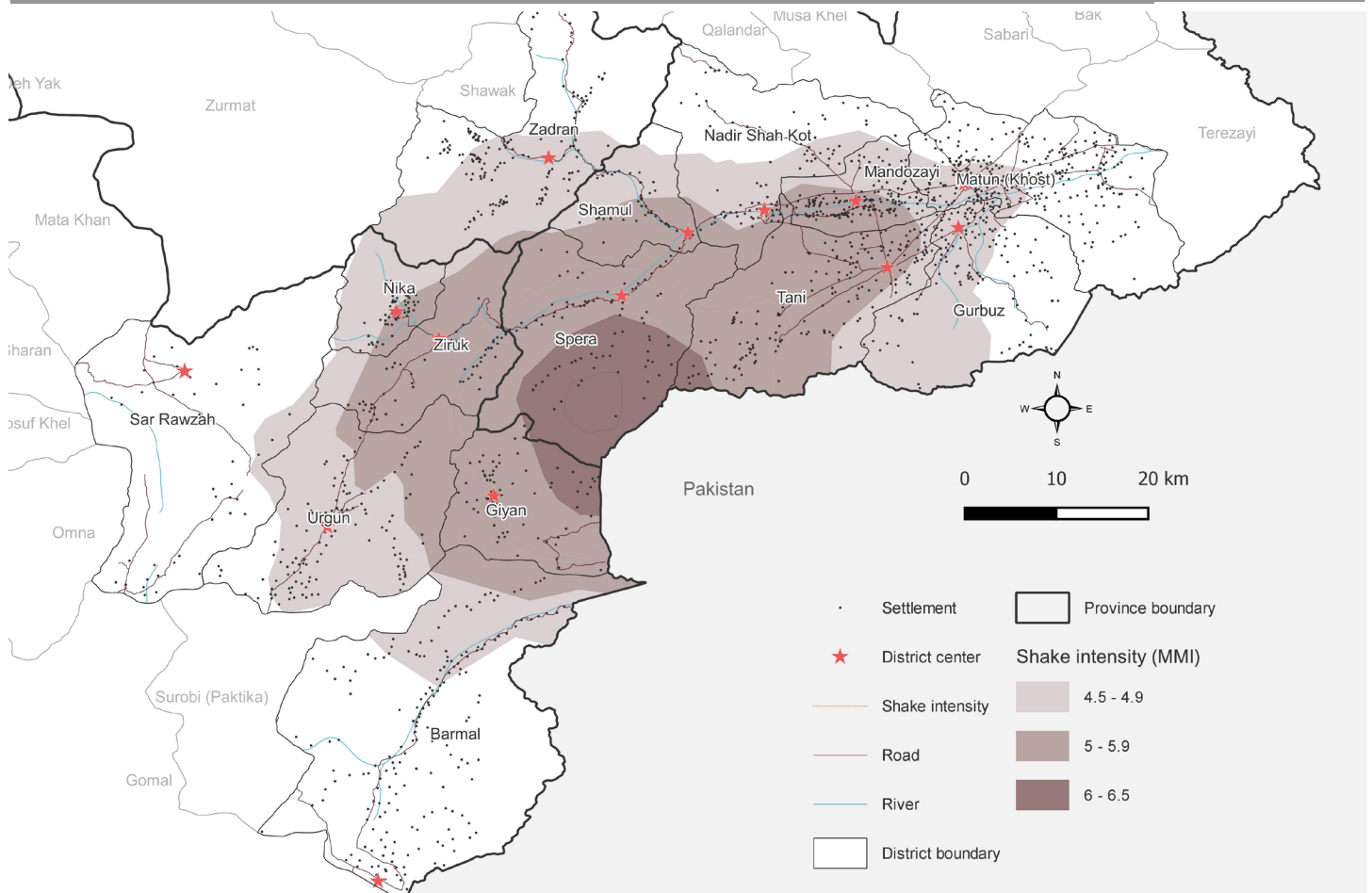


Key Findings

- As many as 14% of HHs (approximately 13,000 HHs) had severely damaged or completely destroyed shelters, while a further 50% (approximately 48,000 HHs) had minor or moderately damaged shelters in need of repair.
- More severely damaged or collapsed shelters were found in districts where they tended to be constructed on hillsides, particularly Spera (82%) and Giyan district (54%), than those constructed on flat or leveled ground. Furthermore, only 13% of HHs reported that shelter materials from destroyed could be reused in rebuilding.
- Major markets were reported to be open and functional, and goods were available. However, 70% of markets reported Non-Food Items to be scarcer.
- The vast majority of HHs were unable to replace or repair their own shelters due to the cost of materials (93%) and labour (90%). Debris was common across the assessed area (30%), particularly in Spera (59%) and Giyan (77%).
- Very few schools (4%) or Health centres (2%) had been severely damaged or destroyed. Only 9% of schools and health centres were reported to have lost functionality.
- Health centers were reported to suffer from a lack of necessary materials and staff, including enough medicine (83%), doctors (47%) and, medical equipment (39%).



Map 1: Area of Assessment Khost, Paktika and Paktya Provinces, Afghanistan



1. Health Cluster, WHO, Earthquake in Paktika and Khost Provinces, Afghanistan, Situation Report #10, 17 Jul 2022

2. Emergency Shelter and Non-Food Items Cluster, Afghanistan
3. United Nations High Commissioner for Refugees, Afghanistan





Earthquake Damage Assessment Household Shelters

July 2022



General Info of Affected Shelters

Approximate number of households of the assessed earthquake-affected area:⁴ **96,000**

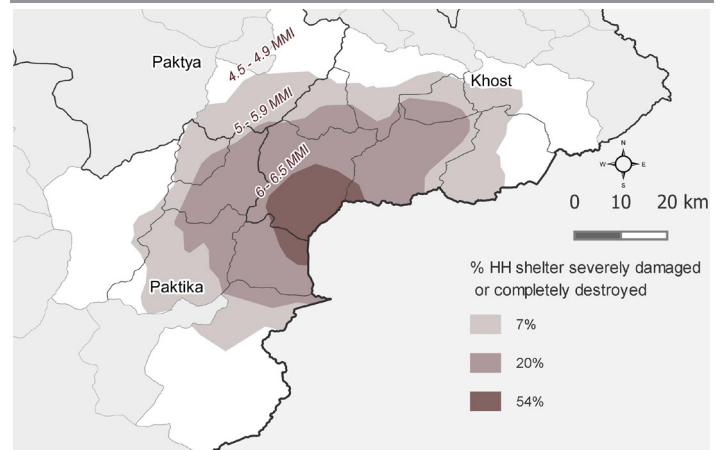
Approximate number of earthquake-affected number of households by reported level of damage to shelter:⁴

No damage	35,000	Severe damage	9,000
Minor damage	18,000	Completely destroyed	4,000
Moderate damage	30,000		

Average size of assessed HHs by HH members: **8.8**



Affected Population Map

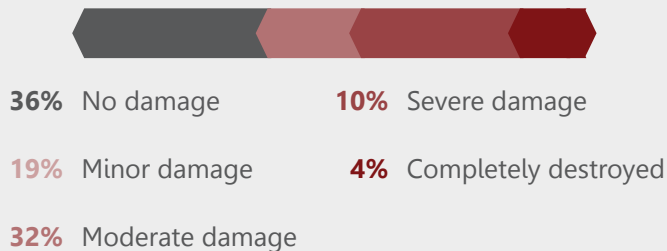


Map 2: % of HH who reported their shelters to have suffered severe damage, or been completely destroyed by MMI⁵ shake zone range, July 2022.



Building Damage

% of assessed HHs by the reported amount of damage their shelter has suffered:⁶



This indicator combined the reported assessed damage to each of the four parts of the shelter including the wall, roof, floor and foundation, and then averaged the scores. Due to the importance of walls in overall damage, the final score could not be below that of the walls. Building damage in each level means:

No damage	0	No visible damage to the building observed
Minor damage	0.1-1	Small cracks but structurally sound
Moderate damage	1.1-2	Large cracks or missing pieces, but still support building
Severe damage	2.1-3	Partly collapsed, may no longer support building
Completely destroyed	3.1-4	Completely Collapsed



Building Repair

% of assessed HHs by the reported status of repairs needed for their shelter since the earthquake:

Repairs are needed but have not started	58%
Repairs were needed and are still ongoing or on hold	1%
Repairs were needed and have been completed	1%
No repairs were needed	41%

% of assessed HHs by the reported type of repairs their shelter:^{6,7}

Roof	21%	Floor	0%
Walls	60%	Foundation	7%
Doors/Windows	12%	Access to utilities (water, electricity, etc.)	0%
Ceiling	1%		



Water and Services

41% of assessed HHs reported some level of damage to their primary water source.

% of assessed HHs by the top three main sources of drinking water for their shelter used currently:

Hand-pump (pumped well) - private	42%
Hand-pump (pumped well) - public	16%
Spring, well or Kariz - unprotected	15%



99% of assessed HHs reported they had access to electricity before earthquake. Of these HHs, **31%** of them reported damage to electricity infrastructure due to earthquake.

95% of assessed HHs reported having access to functional toilets/latrines.

4. The damage percentages were weighted by sampling strata and multiplied by the total population of each strata. Population numbers are based on [Worldpop](#) data and multiplied by population representative HH data collected in this survey. [The HH figures indicate between 301k and 387k individuals in the area, similar to the](#)

[362k PiN noted in the Humanitarian Earthquake Response Plan.](#)

5. [The Modified Mercalli Intensity Scale](#)

6. This indicator is based on enumerator's observation.

7. Respondent could select more than one response.



Earthquake Damage Assessment Educational Facilities

July 2022



Educational Facilities

Number of educational facilities assessed: **380**

Number of the Key Informants (KIs) by the reported type of educational facility building assessed:

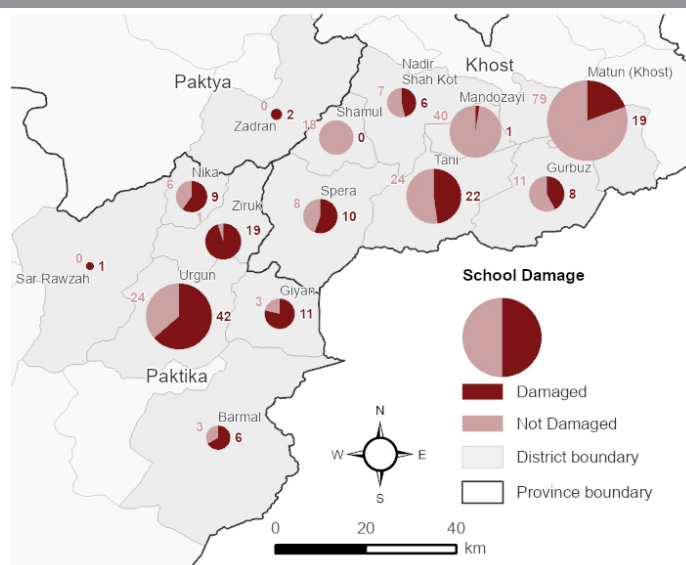
Early Childhood Education (EC)	2
Primary School	82
Middle School	126
High School	114
Technical Training Centre	6
Community Based Education (CBE)	49

% of classrooms in each facility that were functioning (able to hold classes) after the earthquake, according to KIs: **97%**

9.8 classrooms on average in each educational facility were currently functioning (able to hold classes) after the earthquake, compared to **10.1** classrooms on average which had been functioning before that.



Affected Educational Facilities Map

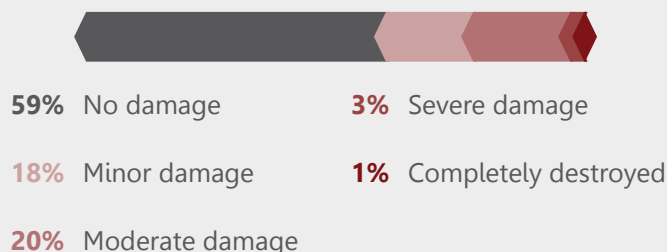


Map 3: % of education facilities reported to have suffered minor, moderate, or severe damage, or been completely destroyed by [MMI5 shake zone range](#), July 2022.



Building Damage

% of assessed KIs by the reported amount of damage the building has suffered:⁶



This indicator combined the reported assessed damage to each of the four parts of the shelter including the wall, roof, floor and foundation, and then averaged the scores. Due to the importance of walls in overall damage, the final score could not be below that of the walls. Building damage in each level means:

No damage	0 No visible damage to the building observed
Minor damage	0.1-1 Small cracks but structurally sound
Moderate damage	1.1-2 Large cracks or missing pieces, but still support shelter
Severe damage	2.1-3 Partly collapsed, may no longer support shelter
Completely destroyed	3.1-4 Completely Collapsed



Building Repair

% of assessed KIs by the reported status of repairs needed for education facility building since the earthquake:⁶

Repairs are needed but have not started	41%
Repairs were needed and are still ongoing or on hold	0%
Repairs were needed and have been completed	2%
No repairs were needed	57%

% of assessed KIs by the reported type of repairs needed:^{6,7}

Roof	10%	Floor	0%
Walls	62%	Foundation	2%
Doors/Windows	25%	Access to utilities (water, electricity, etc.)	1%
Ceiling	1%		



Services affected

% of teachers in each education facility reported to still be teaching, according to KIs: **97%**

10.7 teachers on average in each educational facility were currently teaching after the earthquake, compared to **11** teachers on average who had been teaching before that.



9% of assessed KIs reported that their facility's access to school materials (textbooks, other teaching items, i.e., pens, notebooks) had been affected by the earthquake.



9% of assessed KIs reported that their facility's classroom infrastructure (chairs, desks or carpets, whiteboards/blackboards) had been affected by the earthquake.



Earthquake Damage Assessment Health Facilities

July 2022



Health Facilities

Number of health facilities assessed:

112

Number of assessed Key Informants (KIs) by reported type of health facility assessed:

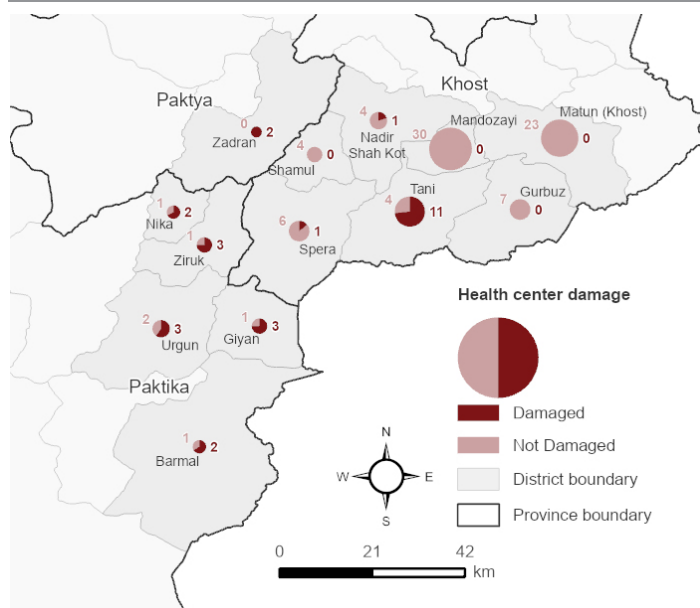
Hospital	7
Health Sub-Centre	35
Basic Health Centre	22
Community Health Centre	23
Mobile Clinic	3
Health Post	22

% of assessed KIs by reported top three most urgent concerns regarding healthcare services since the earthquake:⁷

Medicine	83%
Doctors	47%
New medical equipment	39%



Affected Health Facilities Map



Map 4: % of health facilities reported to have suffered minor, moderate, or severe damage, or been completely destroyed by [MMI5 shake zone range](#), July 2022.



Building Damage

% of assessed KIs by the reported amount of damage the building has suffered:⁶

75%	No damage	2%	Severe damage
10%	Minor damage	0%	Completely destroyed
13%	Moderate damage		

This indicator combined the reported assessed damage to each of the four parts of the shelter including the wall, roof, floor and foundation, and then averaged the scores. Due to the importance of walls in overall damage, the final score could not be below that of the walls. Building damage in each level means:

No damage	0	No visible damage to the building observed
Minor damage	0.1-1	Small cracks but structurally sound
Moderate damage	1.1-2	Large cracks or missing pieces, but still support shelter
Severe damage	2.1-3	Partly collapsed, may no longer support shelter
Completely destroyed	3.1-4	Completely Collapsed



Building Repair

% of assessed KIs by the reported status of repairs needed for the health facility building since the earthquake:⁶

Repairs are needed but have not started	23%
Repairs were needed and are still ongoing or on hold	0%
Repairs were needed and have been completed	1%
No repairs were needed	76%



Services

19% of assessed KIs reported damage to the health facility's water source.

% of the assessed KIs by reported top four facility's services to **not** be functioning properly after the earthquake:^{7, 8}

Inpatient services	40%	Basic laboratory services	40%
Ambulance	40%	Surgical care	40%

% of assessed KIs by current occupancy rate of the hospital:⁸

20%	Not sure	0%	50-75%
20%	0-25%	20%	75-100%
20%	25-50%	20%	Over 100%



96% of assessed KIs reported that the health facility had access to electricity. Of these KIs, **7%** of them reported damage to the electricity infrastructure due to the earthquake.

8. Question was only asked to KIs representing hospitals.



Markets

Number of major markets (with more than 20 shops there) assessed:

33

Assessed KIs reported the % of shops still functioning in the major markets after the earthquake:

96%

19.4 functioning shops on average were currently functioning in each market area after the earthquake, compared to **21.2** functioning shops on average which had been functioning before that.

% of assessed KIs who reported prices had changed in the major market since the earthquake:

50% Prices have risen

50% No changes in prices

0% Prices have fallen

28% of assessed KIs reported that the availability of food items in the market had changed.

Of those KIs who reported the availability of food item in the market had changed due to the earthquake:

22% Many more goods are available	11% Many fewer goods are available
44% A few more goods are available	0% No goods are available
22% A few less goods are available	



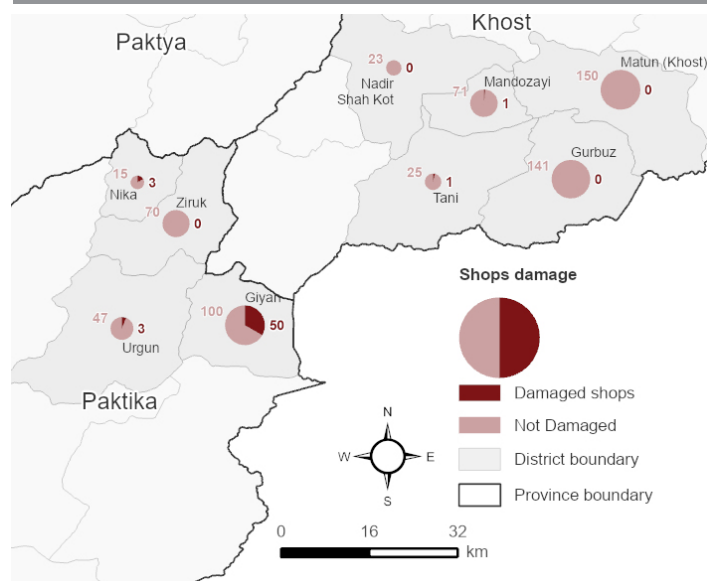
Building Damage

% of assessed KIs reported proportion of shops in each market by the amount of damage they have suffered.⁶

78% No damage	5% Severe damage
14% Minor damage	0% Completely destroyed
3% Moderate damage	



Affected Markets Map



Map 5: % of market shops reported to have suffered minor, moderate, or severe damage, or been completely destroyed by [MMI² shake zone range](#), July 2022.

31% of assessed KIs reported that the availability of non-food items in the market had changed.

Of those KIs who reported the availability of non-food items in the market had changed due to the earthquake:

20% Many more goods are available	10% Many fewer goods are available
10% A few more goods are available	0% No goods are available
60% A few less goods are available	

This indicator shows the percentage of shops in all assessed markets by the observed level of damage to each shop sustained due to the earthquake.

No damage	No visible damage to the building observed
Minor damage	Small cracks but structurally sound
Moderate damage	Large cracks or missing pieces, but still support shelter
Severe damage	Partly collapsed, may no longer support shelter
Completely destroyed	Completely Collapsed

Assessment Methodology: To assess health and education facilities, lists of facilities were obtained from their respective clusters. To assess markets, [Humanitarian Situation Monitoring data](#) were used for sampling. Household shelters were sampled through a household representative approach and stratified by [Modified Mercalli Intensity \(MMI\) impact shake zones](#). Buildings were clustered by village, after which the enumerator would randomly select buildings in the village. Between 02-20 July 2022, REACH conducted 812 stratified random household interviews were used to assess the total affected area. An additional 318 interviews were conducted to provide analysis on 4 additional districts: Barmal, Giyan, Spera, and Tani. The household assessment was representative with 95% confidence and 7% margin of error. As much as 525 purposive interviews with representatives from health, education, and major market infrastructure were conducted. Data were cleaned and analysed by a customized R script for data checking from 02-26 July 2022 by the REACH teams.