

24 June 2022




PRELIMINARY SATELLITE- DERIVED DAMAGE ASSESSMENT KHOST EARTHQUAKE (21 June 2022, Mw 6.2)



Paktika and Khost Provinces, Afghanistan



 Status: Destroyed and damaged structures observed.

 Further action(s): full assessment to be conducted



AFGHANISTAN

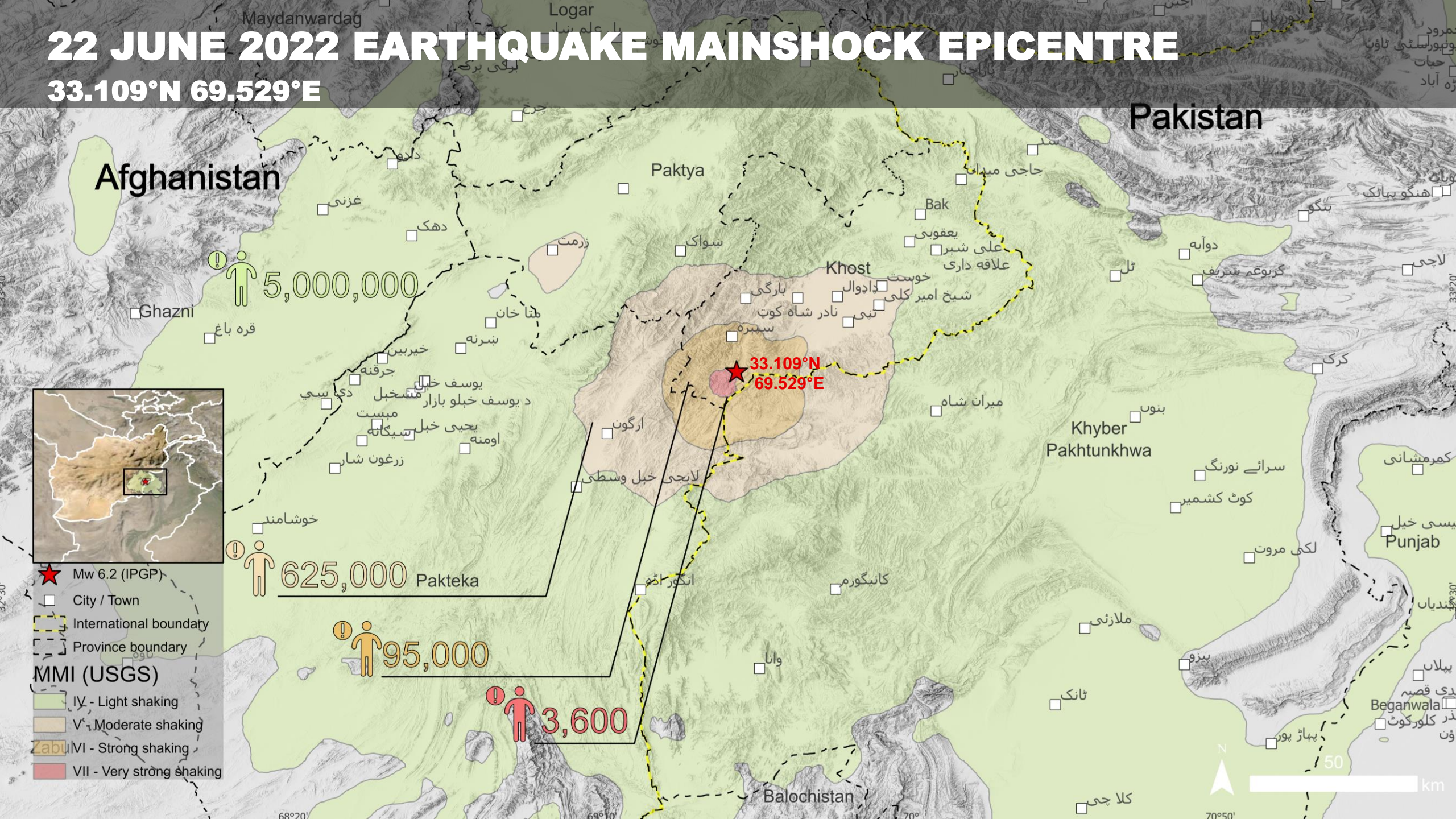
22 June 2022

-  AREA OF INTEREST (AOI)
-  DISTRICTS
-  MAINSHOCK EARTHQUAKE EPICENTRE (21 June 2022, Mw6.2)



22 JUNE 2022 EARTHQUAKE MAINSHOCK EPICENTRE

33.109°N 69.529°E



Afghanistan

Pakistan

5,000,000

625,000 Pakteka

95,000

3,600

33.109°N
69.529°E



- ★ Mw 6.2 (IPGP)
- City / Town
- - - International boundary
- - - Province boundary
- MMI (USGS)
- IV - Light shaking
- V - Moderate shaking
- VI - Strong shaking
- VII - Very strong shaking



Afghanistan Earthquake Overview

A 6.2 magnitude shallow depth earthquake (~6km) struck the eastern part of Afghanistan on June 21 2022, at 01:30 local time. The earthquake epicentre was located 160km southeast of the capital city of Kabul in Afghanistan's eastern provinces of Pakteka, SW of the city of Khost close to the Afghanistan-Pakistan borders.

Damage

Two provinces have been badly affected: Pakteka and Khost, and within these provinces most destruction and deaths has been reported in the districts Gayan and Barmal (Gyan and Birmil on inset map – page 2). According to media reports dozens of villages are severely affected.

Deaths and Injuries

Several [sources](#) have reported more than 1000 deaths and 1500 injured with numbers expected to rise.

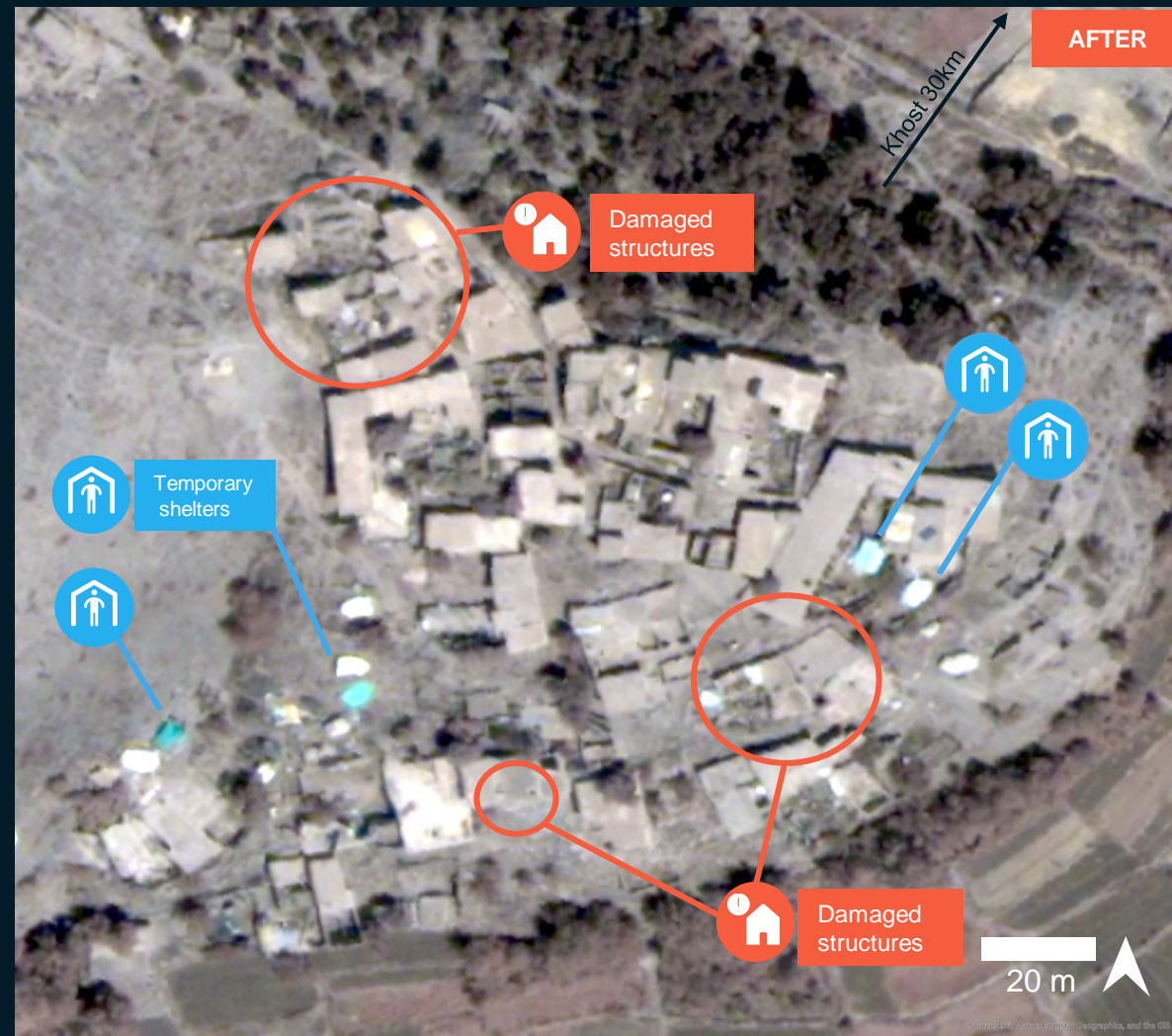
AOI 1 SPERA DISTRICT, PAKETA PROVINCE (Epicentral area)

Damaged structures and shelters observed

Image center:
69°29'22"E
33°8'6"N



Worldview-2 / 09 June 2021



Worldview-3 / 23 June 2022

AOI 1 SPERA DISTRICT, KHOST PROVINCE (~13 km from the epicentre)

Image center:
69°28'52.896"E
33°12'6.383"N



Damaged structures observed



Worldview-2 / 09 June 2021



Worldview-3 / 23 June 2022

AOI 1 SPERA DISTRICT, KHOST PROVINCE (~13 km from the epicentre)

Image center:
69°29'20.576"E
33°12'16.611"N



Damaged structures observed



Worldview-2 / 09 June 2021



Worldview-3 / 23 June 2022

AOI 1 SPERA DISTRICT, KHOST PROVINCE (~13 km from the epicentre)

Image center:
69°29'28.046"E
33°12'12.801"N



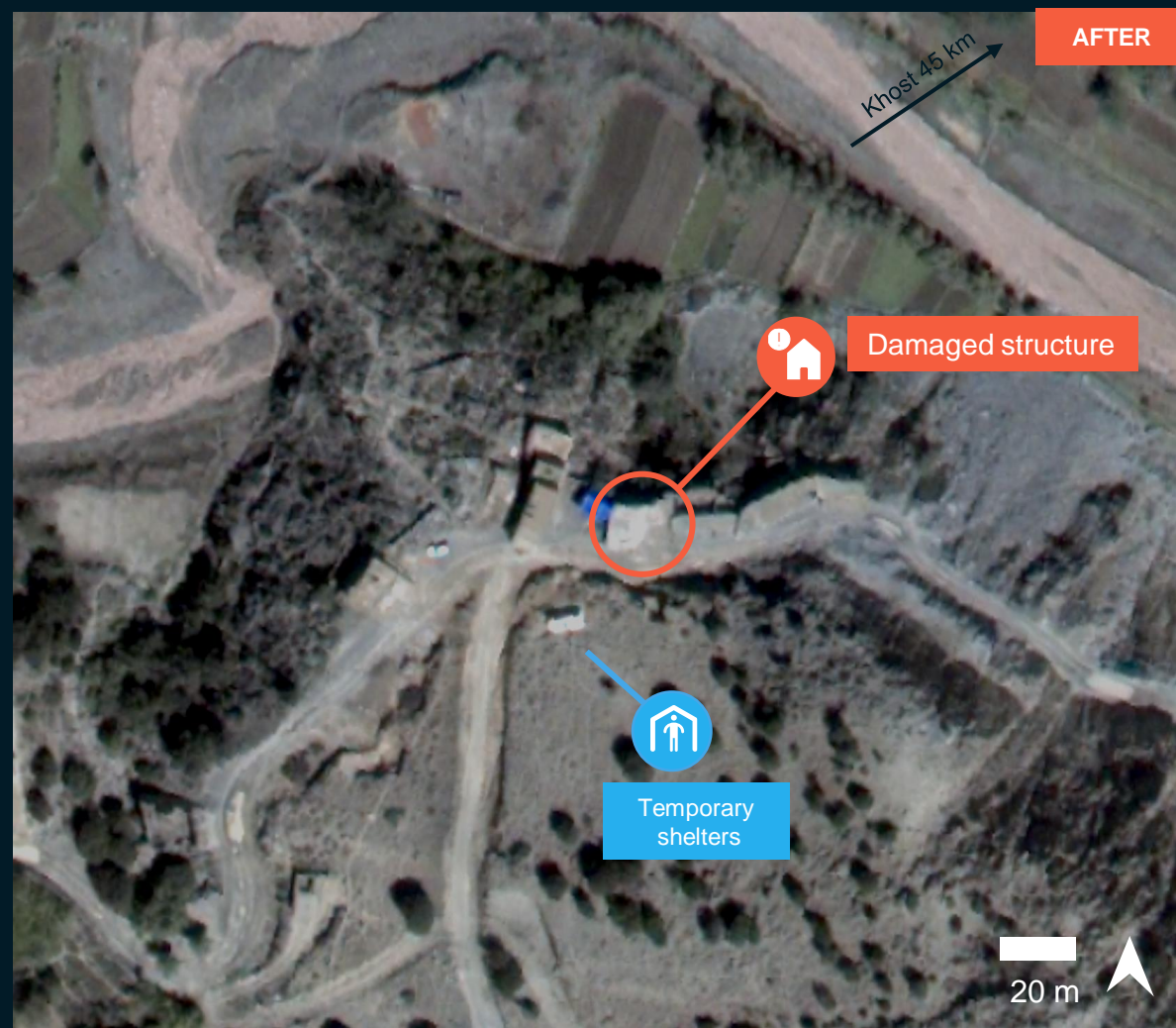
Damaged structures observed



BEFORE

20 m

Worldview-2 / 09 June 2021



AFTER

Khost 45 km

Damaged structure

Temporary shelters

20 m

Worldview-3 / 23 June 2022

AOI 1 SPERA DISTRICT, KHOST PROVINCE (~9 km from the epicentre)

Damaged structures and shelters observed

Image center:
69°33'08"E
33°11'27"N



Worldview-2 / 09 June 2021

Worldview-3 / 23 June 2022

AOI 1 SPERA DISTRICT, KHOST PROVINCE (~8 km from the epicentre)

Damaged structure, affected roads and shelters observed

Image center:
69°32'55"E
33°10'37"N



Worldview-2 / 09 June 2021

Worldview-3 / 23 June 2022

AOI 1 SPERA DISTRICT, KHOST PROVINCE (~3 km from the epicentre)

Damaged structure and shelters observed

Image center:
69°32'57"E
33°07'54"N



Worldview-2 / 09 June 2021



Worldview-3 / 23 June 2022

SUMMARY OF FINDINGS

Based on seismic intensities (USGS) and population data (worldpop), about 100,000 people were exposed to strong and very strong shaking in Pakteka and Khost provinces, Afghanistan & Pakistan;

Heavily damaged structures and affected roads can be observed in the epicentral zone as of 23 June 2022;

Temporary shelters observed as of 23 June 2022 in the vicinity of houses.

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Data sources:

(1) Satellite Image (Post-event)

Worldview-3 / 23 June 2022
Copyright: 2022 Digital Globe
Source: USGS / HDDS

(2) Satellite Image (Pre-event)

Worldview-2 / 09 June 2021
Copyright: 2021 Digital Globe
Source: USGS / HDDS

(3) Ancillary data

Earthquake epicentre: Institut de Physique du Globe De Paris (IPGP)
MMI intensities: USGS
Administrative boundaries: Afghanistan Information Management Services, HDX
Populated places: OpenStreetMap

Analysis: United Nations Satellite Centre (UNOSAT)
Production: United Nations Satellite Centre (UNOSAT)

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