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A Preliminary Report of June 27th, 2026, Pakistan Earthquake (M: 5.5)

(Report No.: NCS-NSN-EPG-12)

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Report on Moderate Earthquake M 5.5 in Pakistan on June 27th, 2026

On 27 June 2026, a moderate-magnitude earthquake (Mw 5.5) struck the Barkhan District, Balochistan Province, Pakistan, at 08:36:23 IST. The event's epicentre (30.271° N, 69.733° E) was located at a focal depth of 40 km, approximately 428 km NW of Bikaner (Rajasthan, India), 478 km S of Kabul (Afghanistan), 491 km SW of Islamabad (Pakistan), 500 km W of Bathinda (Punjab, India), and 512 km WSW of Amritsar (Punjab, India), as shown by the red star in **Figure 1.**

This earthquake was preceded by a Mw 5.2 event on 26 June 2026 at 17:18:49 IST, occurring at nearly the same location, represented by the blue star adjacent to the red star **(Figure 1)**. In addition, two foreshocks of magnitude greater than 4.0 were recorded in the vicinity prior to the Mw 5.2 event, indicating a sequence of moderate seismic activity culminating in the Mw 5.5 mainshock.

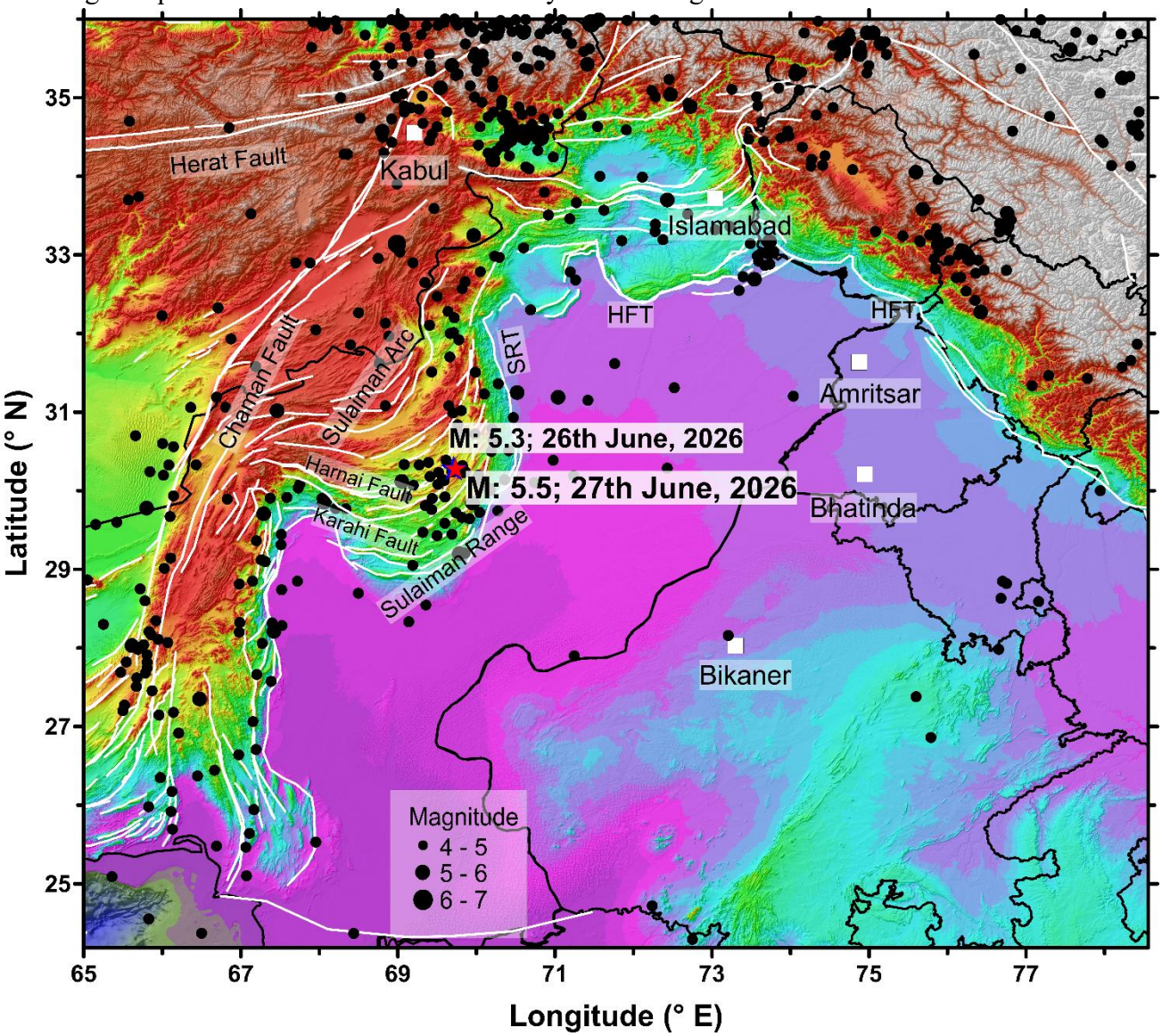

Figure 1: Map showing the location of the earthquake of M 5.5 (Red Star) that occurred on June 27, 2026, and the M 5.3 (Blue Star) earthquake that occurred on June 26, 2026, in Pakistan. White lines represent the major fault system in the epicentral region. The black circles represent the past 10 years of seismicity (M 4 and above) that occurred in and around the epicentral region (www.seismo.gov.in).

The occurrence of earthquakes is related to tectonic activity associated with the **Hernai Fault, Karahai Fault, and Salt Range thrust in the Suleiman Range**, a highly seismogenic zone. Past seismicity is shown in Figure 1. The area represents the tectonic boundary where the Indian Plate is being

subducted (thrust beneath) the Eurasian Plate, leading to frequent seismic activity in the region. Past seismicity shows a consistent pattern of seismic events with magnitudes greater than 5.0 in and around the epicentral region, highlighting the area's vulnerability to earthquakes. Preliminary analysis of the fault plane solutions derived from waveform inversion indicates that the earthquakes were predominantly caused by thrust faulting. This suggests that the tectonic stress in the region is being released through compressional forces. The maximum intensity, as measured on the Modified Mercalli Intensity (MMI) scale, was recorded as VII near the epicentral region (**Figure 2**).

The details of the maximum peak ground acceleration (PGA) recorded is tabulated below

Site	Distance from the epicentre (km)	Maximum PGA
Jaisalmer (JASL)	389	0.000073g
Bikaner (BKNR)	425	0.002g
Jammu (JMU)	558	0.00011g
Ajmer (AJM)	642	0.00011g
Chandigarh (CGRH)	672	0.0018g
Jhajjar (JHJR)	694	0.00063g

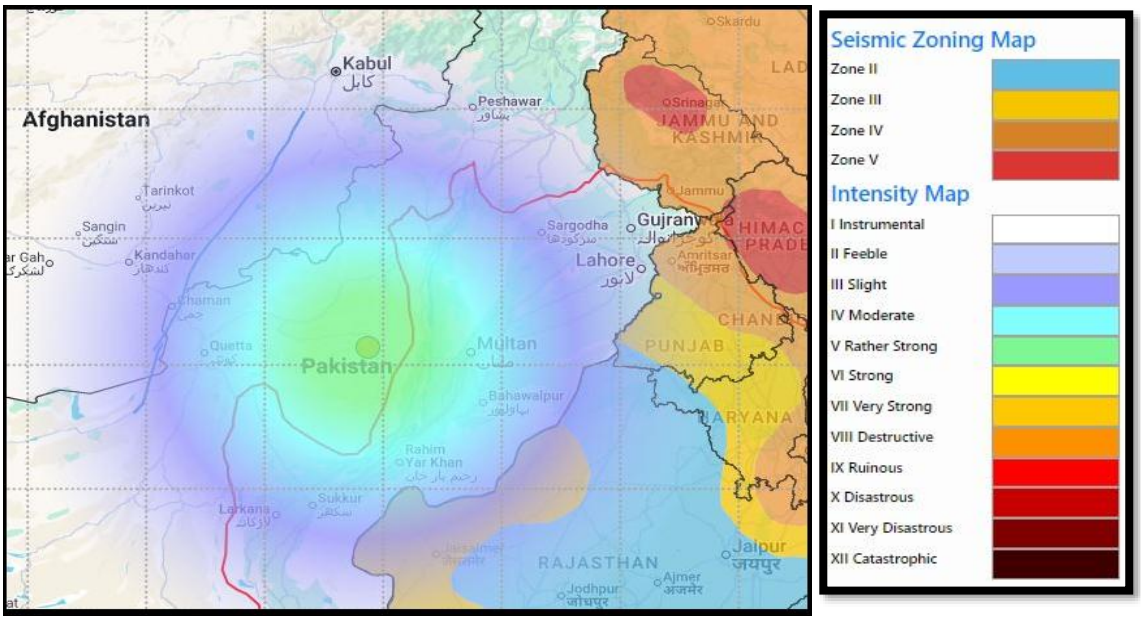

Figure 2: Intensity map of the earthquake of M 5.5 that occurred on 27th June 2026 in Pakistan.