



Devastating Earthquake Strikes Afghanistan

[Source: IE](#)

Afghanistan was struck by a **6.0-magnitude earthquake**, killing over **800 people** highlighting the country's extreme vulnerability to seismic hazards.

Afghanistan Vulnerability to Seismic Hazards

- Afghanistan is one of the most earthquake-prone countries due to its location at the **collision zone of the [Indian and Eurasian tectonic plates](#)**.
 - Many quakes in Afghanistan are **shallow**, releasing high energy at the surface, causing severe damage.
- **Major Earthquake Zones:**
 - **Hindu Kush (Northern Afghanistan):** Known for both shallow and deep-focus quakes due to the sinking of the Indian Plate's lithosphere.
 - The [Hindu Kush region](#) (spans Afghanistan, Bangladesh, Bhutan, China, India, Nepal, Myanmar and Pakistan), forms part of the **Alpide Belt**, the world's second most seismically active zone after the [Circum-Pacific Belt](#).
 - Since 1900, Hindu Kush region has experienced 12 earthquakes above magnitude 7, underscoring its high seismic activity.
 - **Sulaiman Range (Southeastern Afghanistan & Western Pakistan):** Characterized by destructive shallow, thrust fault quakes.
- **Active Fault Systems:** [Faults](#) like the **Chaman Fault and Main Pamir Thrust (or Pamir Frontal Thrust)** are major sources of seismic activity in Afghanistan.

Afghanistan

- It is a landlocked, multi-ethnic country in **South-Central Asia**. Its capital is Kabul, and it shares borders with **Pakistan, India, Iran, Turkmenistan, Uzbekistan, Tajikistan, and China**.
- The **Hindu Kush mountains** dominate its terrain, with passes like Khyber and Shebar.

Fault lines crossing Afghanistan



EARTHQUAKE



ABOUT

- Shaking of the earth; caused due to release of energy, generating **seismic waves in all directions**

HYPOCENTER

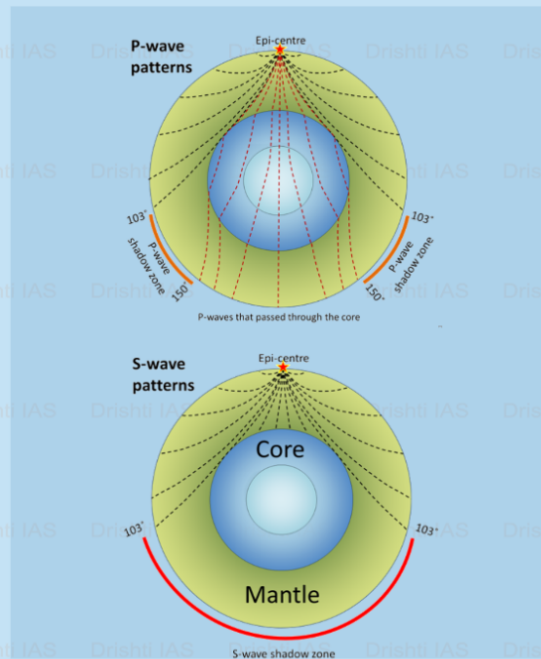
- Location where the earthquake starts (below earth's surface)

EPICENTER

- Location right above the Hypocenter (on the earth's surface)

EARTHQUAKE WAVES

- Body Waves:** Move in all directions travelling through the body of the earth
 - P Waves:** Move faster, First to arrive at surface, Similar to sound waves, Travel through gaseous, liquid and solid materials
 - S Waves:** Arrive at surface with some time lag, Travel only through solid materials
- Surface Waves:** Last to report on seismographs, More destructive, Cause displacement of rocks
 - Love Waves:** Same motion as S-waves (horizontal) without vertical displacement, Sideways motion perpendicular to the direction of propagation, Faster than Rayleigh waves
 - Rayleigh Waves:** Cause the ground to shake in an elliptical pattern, Spread out the most of all seismic waves, Move vertically and horizontally in a vertical plane



CAUSES OF EARTHQUAKES

- Release of energy along a Fault/Fault Zones** (break in the crustal rocks)
- Movement of **tectonic plates** (most common)
- Volcanic eruption** (stress changes in rock-injection/withdrawal of magma)
- Human activities** (mining, explosion of chemical/nuclear devices etc.)

MEASURING EARTHQUAKE

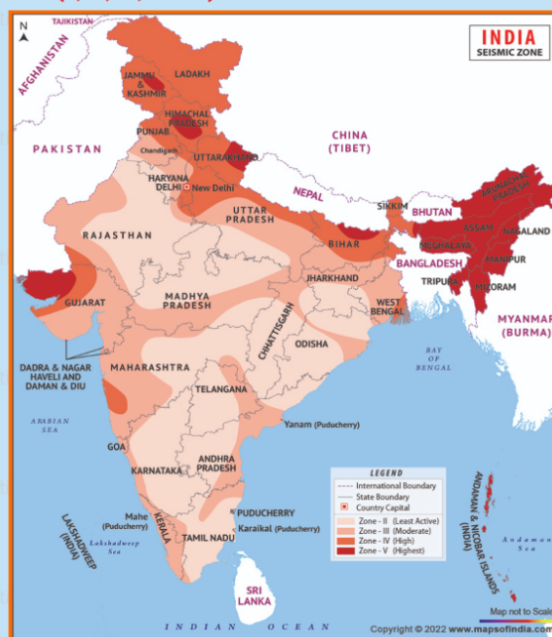
- Seismometers** - Measures seismic waves
- Richter Scale** - Measures magnitude (energy released; range: 0-10)
- Mercalli** - Measures intensity (visible damage; range: 1-12)

DISTRIBUTION

- Circum-Pacific Belt** - 81% of earthquakes
- Alpide Earthquake Belt** - 17% of the largest earthquakes
- Mid-Atlantic Ridge** - Mostly submerged underwater

EARTHQUAKE IN INDIA

- India is **one of the highly earthquake affected countries** due to the presence of technically active mountains - the Himalayas.
- India has been divided into **4 seismic zones** (II, III, IV, and V)



Read more: [Earthquake](#)

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