Earthquake in Morocco

Published On: 11-09-2023

Why is in news? A rare, powerful earthquake struck Morocco on September 8 night, killing hundreds of people and damaging buildings, including in the historic city of Marrakech.

Earthquake in Morocco:

As per the US Geological Survey, the earthquake, which hits, had a magnitude of 6.8. The **epicentre of the quake** was the **town of Ighil**, roughly 70 km south west of Marrakech. It was a **fairly shallow quake**.

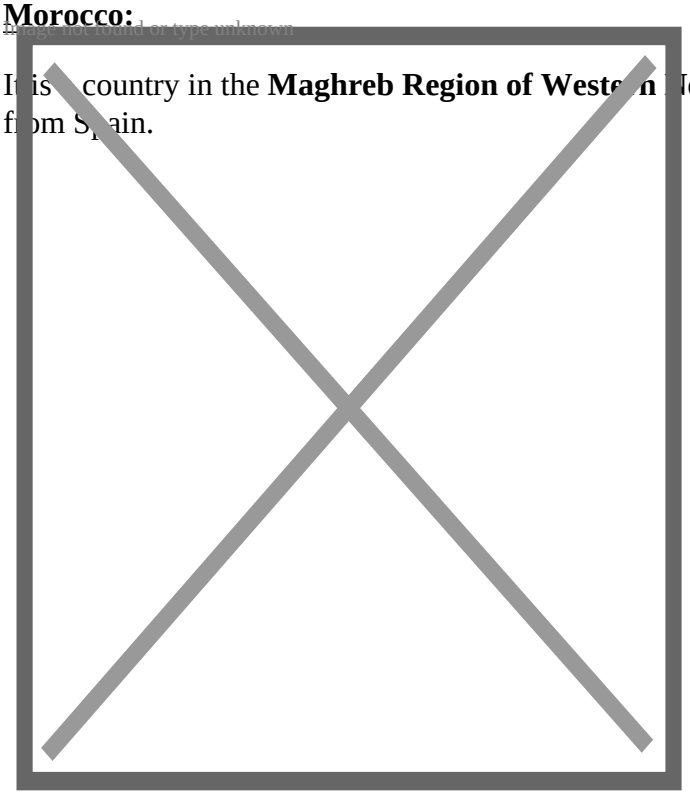
According to experts, such quakes are **generally more dangerous** as they carry more energy than when they emerge to the surface, when compared to quakes that occur deeper underneath the surface.

While deeper quakes do indeed spread farther as seismic waves move radially upwards to the surface, they lose energy while travelling greater distances.

Morocco:

Image not found or type unknown

It is a country in the **Maghreb Region of Western North Africa** that lies **directly across the Strait of Gibraltar** from Spain.



The **Atlas Mountains** dominate the central part of the country, while the Rif Mountains make up the northern edge.

The Imperial Cities of Morocco are the **four historical capital cities** of Morocco: **Fez, Marrakesh, Meknes, and Rabat**. **Rabat is the current capital of Morocco**.

Jebel Toubkal is the highest point in Morocco and is also the highest peak of the Atlas Mountains.

The southeastern region of the country is blanketed by the **Sahara Desert**, the world's third-largest desert.

It is bordered by the two countries of Western Sahara to the south and Algeria to the east. It has coastlines on the Atlantic Ocean to the west and the Mediterranean Sea to the north.

Berbers or the Berber peoples, also called by their contemporary self-name Amazigh or Imazighen, are a diverse grouping of distinct ethnic groups indigenous to Morocco.

Most of Morocco north of Western Sahara, particularly along the coasts, experiences a typical Mediterranean climate, with mild wet winters and hot dry summers.

A Moroccan traveler, **Ibn Battuta** (1333-1347 AD) visited India during the **reign of Muhammad-bin-Tughlaq**.

With its acquisition of Western Sahara, Morocco came to possess some two-thirds of the world's reserves of phosphates, used for the manufacture of fertilizers and other products.

Cause of earthquake in Morocco:

This area is situated along the **boundary of the African and Eurasian tectonic plates**, where these massive plates interact, leading to the possibility of seismic activity.

Earthquakes in this region result from the **northward convergence of the African plate towards the Eurasian plate** along a complex plate boundary.

In the case of a particular earthquake in this area, **oblique-reverse faulting** occurs at shallow depths within the Moroccan High Atlas Mountain range.

North Africa typically **experiences infrequent seismic events**, resulting in minimal preparedness. The construction of buildings in this region tends to be compact and often does not adhere to earthquake-resistant construction standards.

Earthquake:

An earthquake is an **intense shaking of the ground** caused by movement under the earth's surface.

The location below the earth's surface where the earthquake starts is called the **focus**.

The location directly above the hypocentre on the surface of the earth is called the **epicentre**.

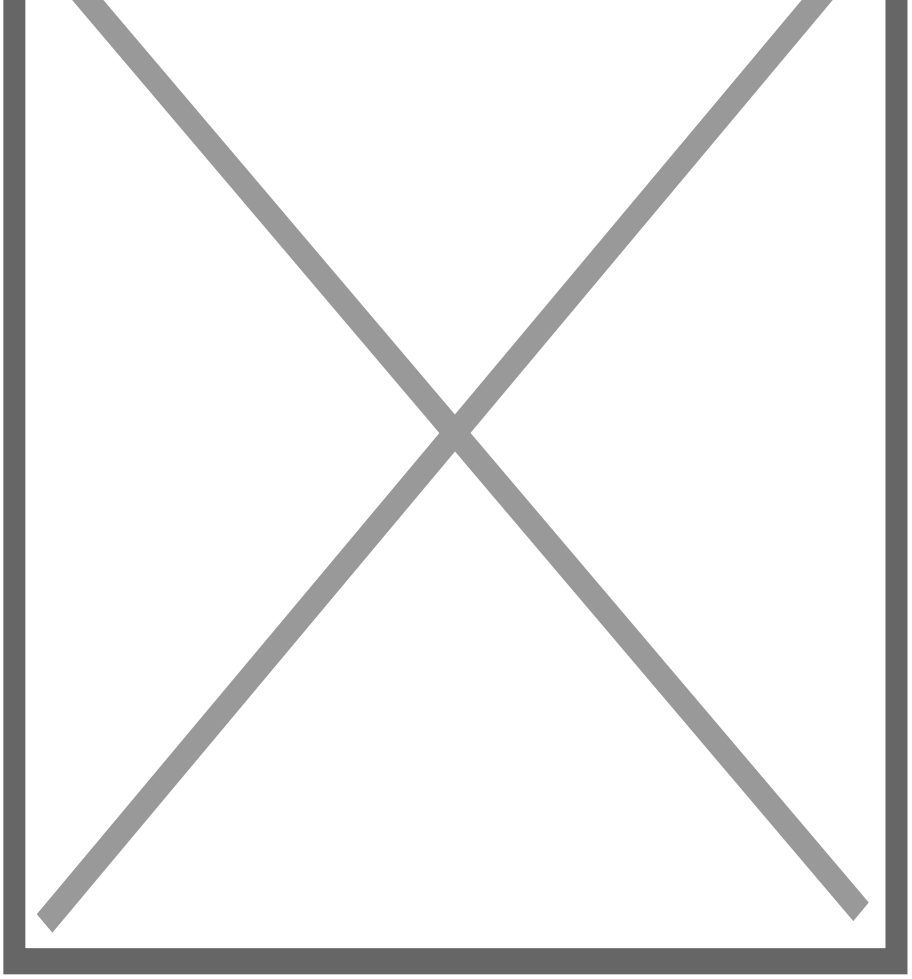
It happens when two blocks (tectonic plates) of the earth suddenly slip past one another releasing stored-up 'elastic strain' energy in the form of seismic waves.

These spread through the earth and cause the shaking of the ground.

They are measured on scales called the -

Moment Magnitude Scale (Mw), based on the total moment (a product of the distance a fault moved and the force required to move it) release of the earthquake.

The **Richter scale** (magnitude scale) - energy released - 0-10.



The intensity scale/Mercalli scale - visible damage - 1-12.

Earthquakes continue to remain the most common natural hazard that cannot be predicted as no early warning systems can be developed.

India and earthquakes:

More than 60% of the land in India is **prone to moderate to very high-intensity** earthquakes.

Some major past earthquakes in India: 1934 Bihar-Nepal Earthquake : 8.4 magnitude, 1967 Koyna Earthquake : 6.5 magnitude, 2001 Bhuj : 7.7 magnitude, 2005 Jammu Kashmir Earthquake

Causes of Earthquakes in India:

North –East region: Collision zones of the Himalayan belt and Sumatran belt. Kopili fault is currently the most active seismic zone in North East India.

Himalayan belt–Collision between Indo-Austral plate with Eurasian plate and Burma Plate with Java Sumatra.

Andaman and Nicobar Islands–Seafloor displacement and underwater volcanoes.

Deccan Plateau–Fault line and energy build-up along the fault line of the river Bhima (Krishna) near Latur and Osmanabad (Maharashtra).

Anthropogenic: Increasing population and unscientific land use in construction.

Steps taken by Government to manage Earthquakes:

National Center for Seismology, Ministry of Earth Sciences: For Earthquake surveillance and Hazard Reporting

National Earthquake Risk Mitigation Project

National Building Code (NBC): To regulate building construction

Building Materials & Technology Promotion Council (BMTPC)

National Retrofitting Program

'India Quake' mobile app to disseminate real-time earthquake information.

Way Forward:

Strengthening of emergency response capability in earthquake-prone areas.

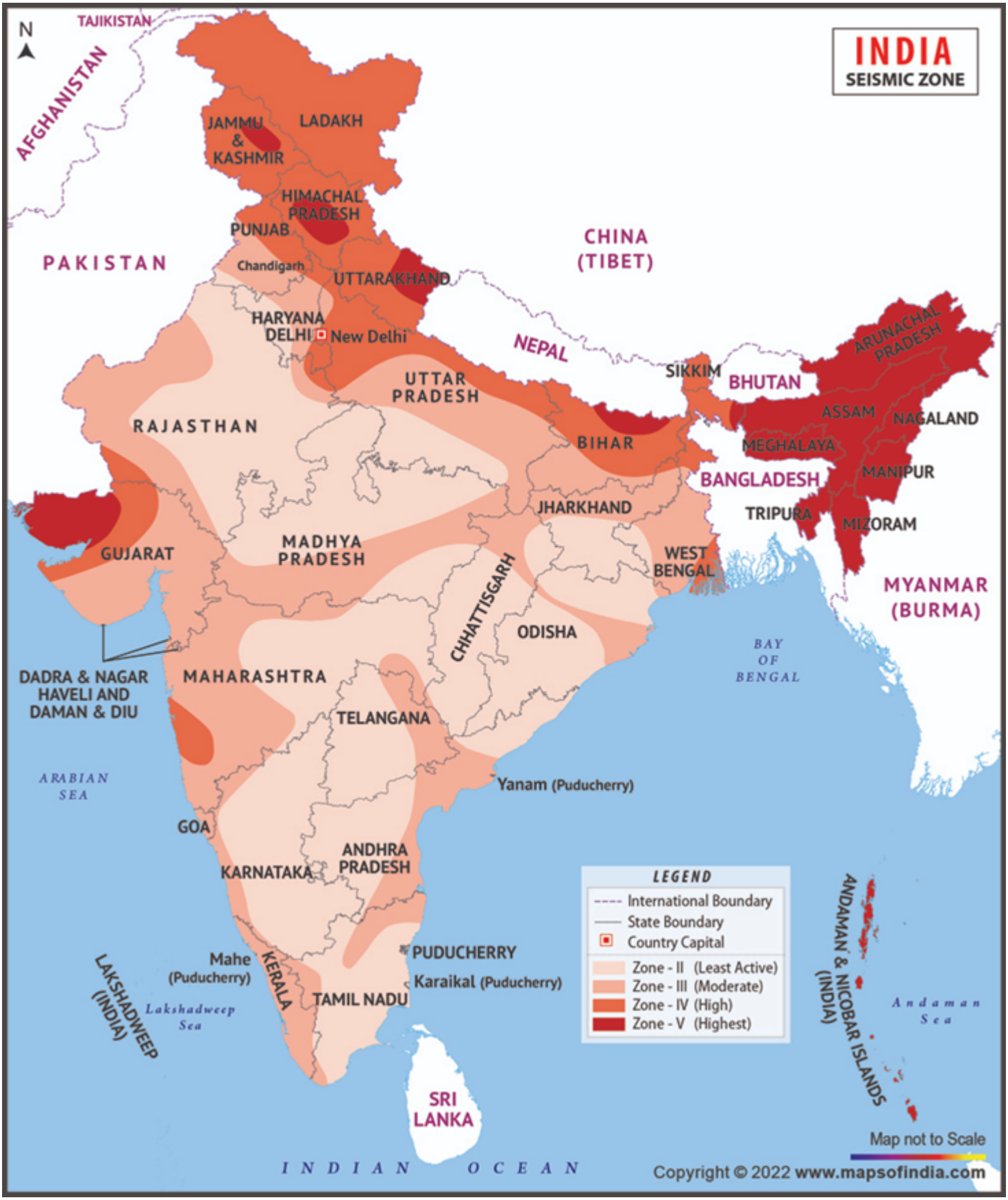
Implementation of NDMA guidelines on earthquake in letter and spirit.

Exclusive earthquake management department.

Investing in prevention is important, but is not a substitute for preparedness;

Promotion of traditional Khasi model of houses in the hilly region.

Single point contact mechanism to address coordination challenges.



Kamaraj IAS Academy
Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040
Phone: **044 4353 9988 / 98403 94477** / Whatsapp : **09710729833**