

# **Emergency Alert System**

For Prelims: Emergency Alert Systems in India, Cyclones, Floods, Landslides, Earthquakes

For Mains: Challenges faced by India's emergency alert systems, Disaster and Disaster Management.

#### **Source: TH**

#### Why in News?

A recent <u>earthquake</u> of 6.4 magnitude hit Nepal on 3rd November 2023, followed by an aftershock, which has exposed significant shortcomings in emergency alert systems in and around Delhi.

- As tremors rattled the region, both government and private alert mechanisms failed to reach a considerable number of people who experienced palpable shaking
- Emergency alert systems are mechanisms that provide early warning and notification of impending or ongoing disasters, such as earthquakes, cyclones, floods, landslides, etc.

## What are the Emergency Alert Systems in India?

- Google's Android Earthquake Early Warning System:
  - This is a feature that uses the sensors in Android smartphones to detect seismic activity and alert users about potential earthquakes.
    - It also collects and shares the data with seismological agencies to improve earthquake detection and analysis.
  - Google launched this feature in India in September 2023, in collaboration with the\_ National Disaster Management Authority (NDMA) and the National Centre for Seismology (NCS), Ministry of Earth Sciences.
  - Google's alerts are triggered based on the Modified Mercalli Intensity (MMI) Scale, an alternative to the Richter scale.
    - The MMI scale measures the effects of an earthquake at a specific location. It describes the observed effects of an earthquake, including what people experience and what happens to buildings and objects.
      - The MMI scale is different from the Richter scale and has a range of 1 to 12.
- Cell Broadcast Alert System (CBAS):
  - The <u>CBAS</u> represents cutting-edge technology that empowers us to disseminate critical and time-sensitive disaster management messages to all mobile devices within specified geographical areas, regardless of whether the recipients are residents or visitors.
  - Common applications of Cell Broadcast include delivering emergency alerts such as severe weather warnings (e.g., **Tsunamis, Flash Floods, Earthquakes**), public safety messages, evacuation notices, and other critical information.
  - It is developed in collaboration with the **Department of Telecommunications (DOT)** and the **NDMA** and other agencies to generate and disseminate the alerts.
- Ministry of Earth Science's National Centre for Seismology (NCS):

- This is the agency responsible for monitoring and reporting the seismic activity in India and its neighbourhood.
- It operates a network of seismological observatories across the country, and provides realtime data and information on earthquakes and tsunamis.
- It also maintains a website and a mobile app, called **BhooKamp**, to provide earthquake alerts and updates to the public.

## What are the Gaps and Challenges in the Emergency Alert Systems?

#### Lack of Coordination and Integration:

- India lacks a **single, standardized emergency alert system**, resulting in inconsistent and unreliable information for both the public and authorities.
  - Multiple agencies and platforms operate independently, causing confusion, duplication, and delays in alert generation and dissemination.
- During recent tremors around Delhi, the NCS website and app crashed, facing a **sudden surge in traffic when real-time information on the tremors** was <u>crucial</u>.
  - This incident highlights significant coordination challenges in managing emergency situations.

#### Lack of Accuracy and Timeliness:

- The emergency alert systems in India are not able to provide accurate and timely information on the location, magnitude, intensity, and impact of the disasters.
  - This is due to the **limitations in the data collection**, analysis, and transmission.

#### Lack of Awareness and Preparedness:

- The emergency alert systems in India are not able to reach and inform the masses
  effectively, due to the lack of awareness and preparedness among the public and the
  authorities.
  - Many people do not know how to access, interpret, and respond to the alerts, and
    often ignore or dismiss them as false alarms.
- There is also a lack of **public education and awareness campaigns** on the disaster risks and mitigation measures and the response mechanisms.

## **Way Forward**

- Develop a unified emergency alert system incorporating multiple channels like SMS, voice calls, social media, and traditional mediums.
  - Establish seamless coordination and integration with key agencies like MoES, DoT, NDMA, IMD, and NCS.
- Leverage advanced technologies such as satellites, and <u>Artificial Intelligence</u> to enhance data collection, analysis, and transmission.
- Strengthen the infrastructure by expanding seismological observatories, deploying additional sensors, and upgrading computing capabilities.
  - Aim for near-instantaneous alert issuance, providing granular details on disaster location, magnitude, and impact.
- Inform and engage the public on disaster risks, mitigation measures, and the functionality of emergency alert systems.
- Conduct frequent drills involving stakeholders and communities to test and refine alert systems and response mechanisms.

#### **UPSC Civil Services Examination Previous Year Question (PYQ)**

Q. Discuss the recent measures initiated in disaster management by the Government of India departing from the earlier reactive approach. (2020)

