



# Kashmir Earthquake, 2005

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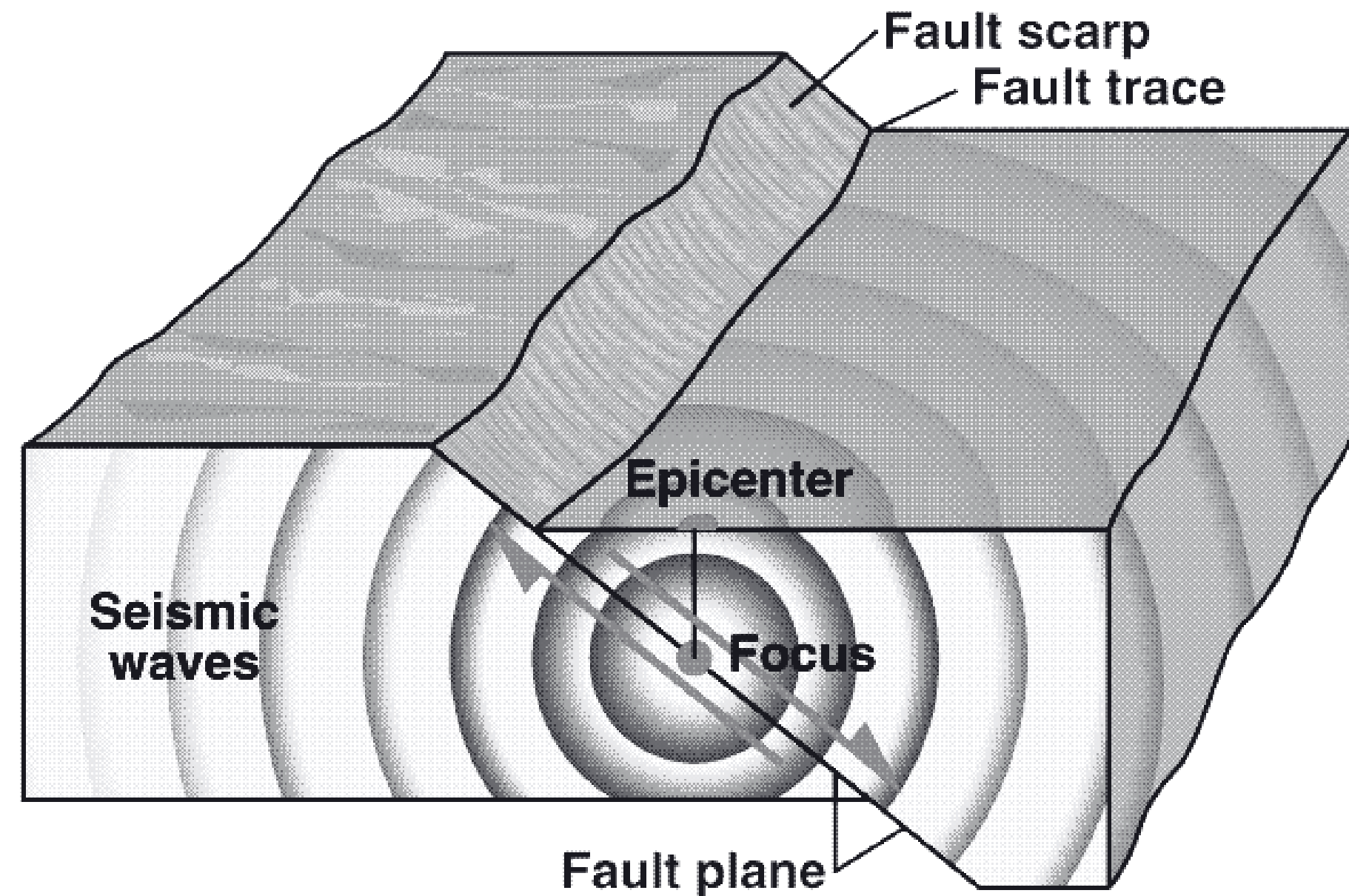


# Overview

## — What is an earthquake?

A natural phenomenon characterized by the sudden release of energy in the Earth's crust, resulting in the generation of seismic waves.

- Magnitude
- Intensity





# Overview

## — What happened in Kashmir?

- October 8, 2005, at 8:50:39 AM local time
- In Pakistan
- Magnitude of 7.6
- At least 32,335 buildings collapsed in various cities
- 4 million area residents homeless
- Deadliest earthquake in South Asia
- Pakistani-administration official death toll: 79,000  
Other sources: 86,000
- More than 978 aftershocks with a magnitude of 4.0



Destroyed building in Muzaffarabad after the earthquake, 2005.

# Affected Regions

— Which regions did it effect?

- Pakistan (Kashmir and NWFP regions)
- Northern India
- Northern Afghanistan
- Tajikistan



# Precautions

— Was Pakistan prepared for the earthquake?

## Building

### Codes:

Although Pakistan and India had set certain rules for construction, these rules could not be effectively implemented.

## Emergency

### Preparedness Plans:

Some efforts had been made to respond to earthquakes and other natural disasters.

## Infrastructure

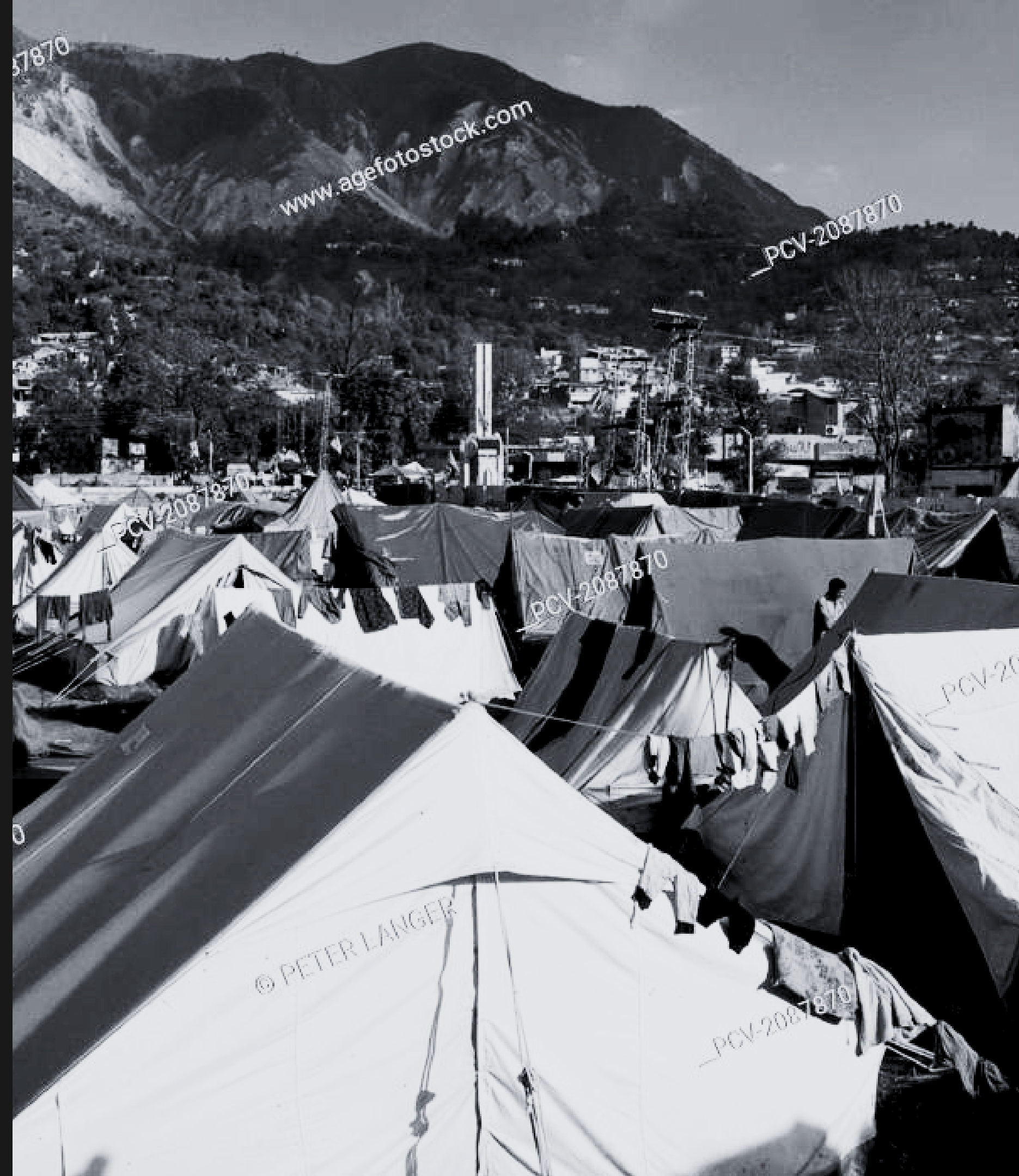
### Resilience:

Initiatives to improve the resilience of critical infrastructure such as hospitals, schools, and government buildings.

# Disaster Management

## — Disaster Specific Actions

- Medical support (Medicine, Field Hospital)
- Monetary aid
- Temporary shelter & reconstruction
- Psychological support





# Disaster Management

## — Self-Response

### **Search and Rescue Efforts:**

- Locals contributed spontaneously and immediately
- Pakistan Armed Forces and provincial administration joined the search and rescue operations

### **Medical Aid & Help:**

- Pakistan Armed Forces and provincial administration helped with the management of medical aid
- The Pakistan Red Crescent provided health care services, more than 416,916 people were reached

### **Shelter & Housing:**

- The Pakistan Red Crescent supplied shelter items such as tarpaulins, blankets and cooking stoves
- 611,000 houses were repaired and reconstructed by Pakistan government

### **Psycho-Social Support (PSS) Activities:**

- 70 government health staff, 100 government teachers and 652 volunteers were trained


# Disaster Management

— Self-Response



# Disaster Management

## — Global Help

- Foreign countries such as U.S. pledged money (total of \$510 million) for earthquake relief and reconstruction efforts and sent 1000 rescue personnel.
  - International Organizations such as NATO provided:
    - a. Urgently needed supplies such as thousands of tents, stoves, blankets
    - b. Engineers, medical units such as a 60-bed field hospital, 200 medical personnel
    - c. Specialist equipment (i.e. for heavy construction)
  - Foreign NGOs such as Turkish Red Crescent contributed the aid efforts by:
    - a. Sending 55,794 tons of aid materials, a total of 34 shipments
    - b. Assigning 250 personnel
    - c. Providing PSS to 32,000 people who live in villages in Batagram and Manshera districts and reaching 27,000 people in camps during the emergency phase
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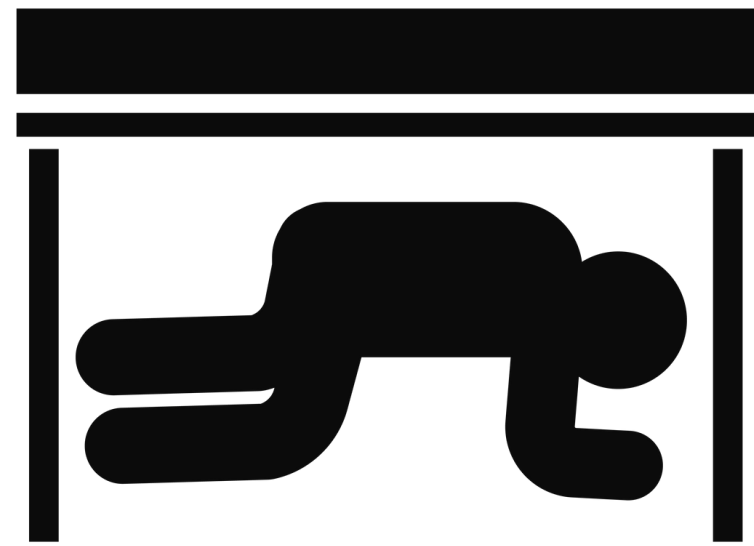
# Disaster Management

— Global Help

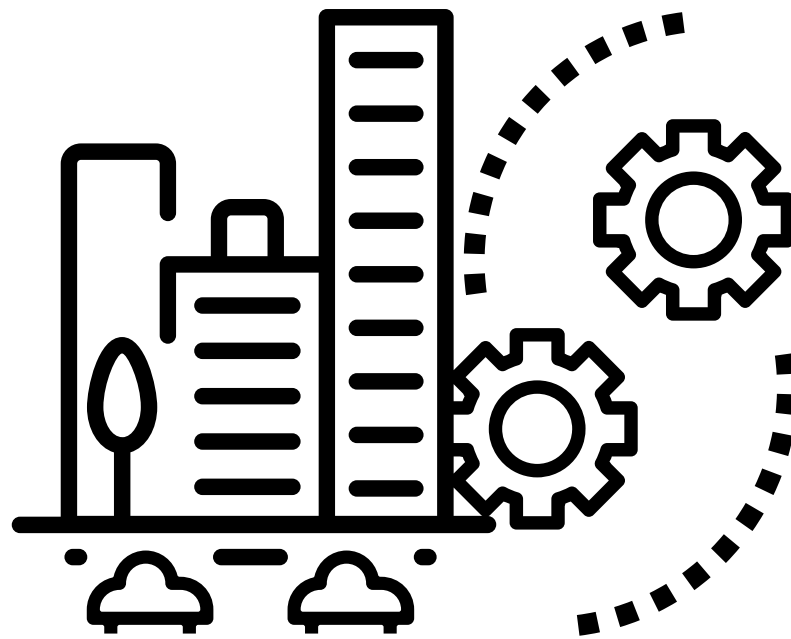


# What was Right/Wrong?

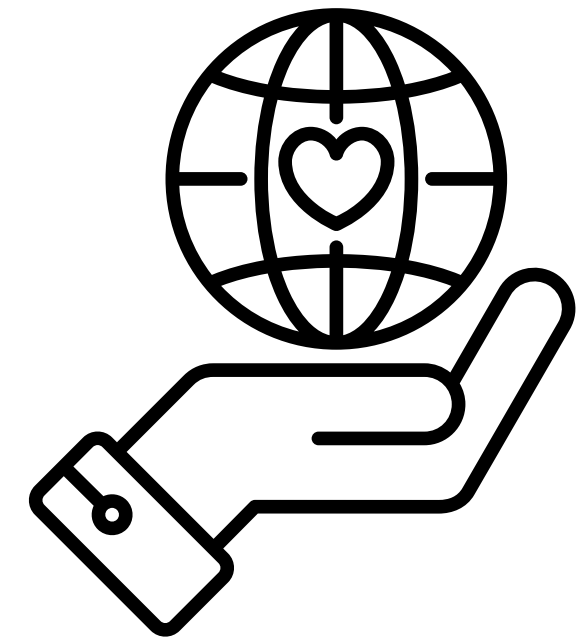
— What was right?



Earthquake Awareness  
and Education



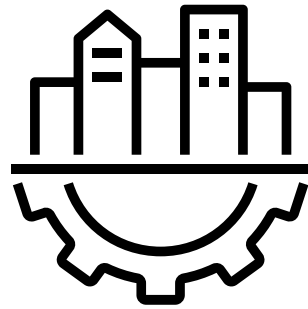
Infrastructure  
Improvements and  
Construction Standards



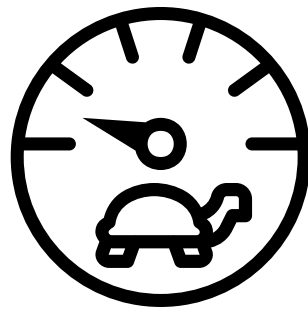
International Response

# What was Right/Wrong?

— What was wrong?



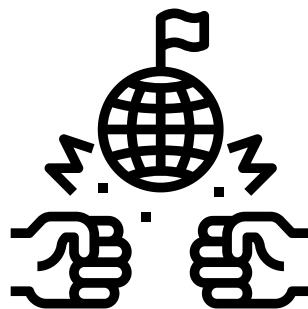
Infrastructure Weakness



Slow and Inadequate  
Response



Non-compliance with Building  
Regulations and Construction  
Standards



Geopolitical Tensions





## Lessons Learned

— What did Pakistan learn from this earthquake?

- Effective risk assessment and hazard mapping, cohesive disaster risk management policies, coordination and oversight mechanisms
- Multi Hazard Vulnerability Risk Assessment Policy
- National Disaster Management Implementation Road Map
- Need for the regulation of construction activity and improvement in the quality of construction

# Lessons Learned

## — What did Pakistan learn from this earthquake?

Prominent research topics and implementations of this research after the earthquake:

- Establishment of disaster mitigation organizations and interest of public sector to develop guidelines for seismically safe construction
- Revision of seismic zoning of country and setting seismic provisions in building codes
- Training the worker for seismically safe construction
- Public awareness for safe construction
- Seismic safety of adobe houses and non engineered dwellings
- Seismic safety of engineered-buildings



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