Environmental Case Study

Earthquake in India

On the morning of January 26, 2001, India’s worst earthquake in half a century struck the northwestern state of Gujarat. In moments, the homes and lives of tens of thousands of people were destroyed. Measuring 7.9 on the Richter scale, the earthquake pulverized cities and towns, killing more than 7,000 people, injuring more than 35,000, and leaving nearly 100,000 homeless. More than 100 multistory buildings collapsed, half of them in Ahmedabad, Gujarat’s commercial center. In one of the day’s worst tragedies, 350 children marching in a parade to celebrate Republic Day, a national holiday, were crushed by falling buildings. In another disaster, dozens of students and teachers were caught in the flattened wreckage of a four-story high school—a school built only a year earlier. Thousands of smaller structures and houses also collapsed as the earth shook hundreds of miles from its epicenter near the city of Bhuj.

International donors quickly sent medical supplies, food, more than 30,000 tents, and sniffer dogs to help locate living people trapped in the wreckage. Because of damaged roads, rail lines, and bridges, though, help reached the damaged cities and towns slowly. Rescue workers struggled to find survivors using crowbars and pickaxes until help and better equipment trickled in, sometimes days later.

Why was this earthquake such a huge disaster? A combination of natural and human factors contributed to the death toll and damage. India sits in a region that is seismically active: the earth is moving slowly but continually as India pushes toward Tibet. It is this movement that is building the Himalayan Mountains, the tallest in the world. But earthquakes have always occurred periodically in India, and the human costs of this one were unusually high. As the dust cleared, accusations arose that building construction had been shoddy. Dishonest contractors had created weak structures, disregarding building codes, with the cooperation of corrupt officials. Building inspectors were accused of demanding bribes and neglecting to enforce construction standards. At the same time, cities in India have grown rapidly in recent decades, so that collapsing cities were larger and denser than in the past. Many residents noted that the older buildings in Ahmedabad stayed standing while newer ones all around them fell. India’s prime minister admitted after the earthquake that the country was ill-prepared to deal with a disaster of this magnitude.

Just a month after the earthquake in Gujarat, a very different earthquake hit Seattle, Washington. This earthquake was also large (6.8 on the Richter Scale), but it was deep in the earth, so that the shaking at the surface was relatively slight. The Gujarat earthquake was closer to the surface, so that movement of the ground was more severe. In addition, Seattle has been working on earthquake preparedness for more than a decade. Building codes are strict, and hundreds of millions of dollars have been spent on reinforcing existing structures. Seattle’s earthquake will cost millions in damage repair, but there was only one death.

These two earthquakes had very different natural, economic, and political situations, which contributed to very different outcomes.