Myanmar is threatened by numerous kinds of natural hazards; humans are thus at risk in almost all parts of the country. There are frequent earthquakes of various magnitudes which occur in diverse regions across Myanmar, mainly in the seismically active areas along the major fault lines. Along the coast, in the Ayeyarwady Delta and in adjacent regions, tropical cyclones frequently make landfall, bringing heavy rain and causing flash flooding on a wide scale. In mountain regions, especially on steep slopes, landslides pose a threat to infrastructures, settlements and farmland (regional physiography: Hla Tun Aung 2003: 20-59, UNISDR 2009).

Five seismic zones have been identified in Myanmar: Zone V, comprising various sub-zones, is located along the Sagaing Fault – which cuts through the centre of Myanmar in a north-south direction – and in the northwest of Myanmar. The major cities of Yangon, Mandalay and Nay Pyi Taw and numerous regional centres (including Taunggyi, Sagaing and Bago) lie within this zone. Zone VI is located mainly in the northwest, in other areas of Central Myanmar and in the northeast. The areas least at risk from earthquakes are located in the Ayeyarwady Delta, in Central and Southern Shan State and in the eastern coastal highlands (seismic map of Myanmar: Maung Thein/Tint Lwin Swe 2006).

EARTHQUAKES

Major earthquakes frequently occur, particularly in the Ayeyarwady catchment and in the large mountain ranges in the west and east of the country (summary list of historical and recent earthquakes in Myanmar: Maung Tein et al. 2009: 50). They result from Myanmar’s location in a major area of disturbance, running north to south, in the collision zone between two tectonic plates, criss-crossed by numerous fault lines (including the major Sagaing and Momeik fault lines; Le Dain/Tapponier/Molnar 1984). A broad fault zone runs from north to south through central Myanmar, the Sagaing fault line from Bago in the south to Puta-O in the north (central volcanic line; Vigny et al. 2003). Major earthquakes frequently occur along this line where two major tectonic plates collide; here also the number of potential victims is highest (Wyss 2008). There is considerable volcanic activity (e.g. mud volcanoes and hot springs) around Shwebo, Monywa, Mandalay, Mount Popa, Magway and Tharyarwady.

TSUNAMIS

Linked to these orogenic processes, the coastal regions are also at risk from tsunamis triggered by seaquakes. These natural events have occurred on various occasions in recent centuries (the first firm evidence relates to the 18th century; Kumar/Achyuthan 2006). However, no systematic studies are currently available (Murty/Rafiq 1991, Cummins 2007).

Myanmar was marginally affected by the tsunami which followed a seaquake (9.1-9.3 on the Richter scale) off the coast of Sumatra on 26 December 2004. This tsunami reached Myanmar, mainly in the southeast, with a time delay of around two to five hours. Myanmar’s coasts sustained relatively little damage, however. According to official figures, 71 people in Myanmar lost their lives and up to 1,500 (estimated figure) suffered direct losses and damage (Satake et al. 2006), mostly in the regions around Pyinsalu and Kapyet in the Ayeyarwady Delta and around Dawei, Myeik, Kawthaung and Sittwe. According to eye-witness-