

Developmental and Financial Cost of Natural Disasters

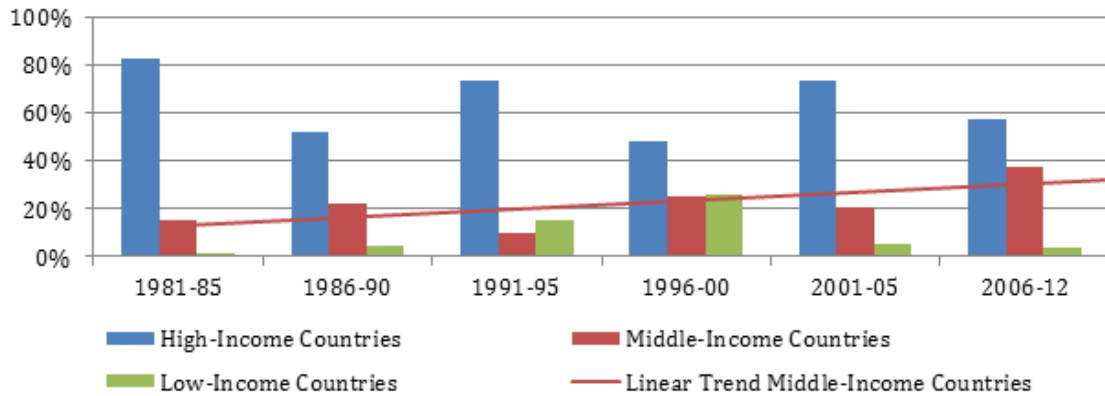
When record floods inundated large swaths of Thailand, including its capital Bangkok, in the fall of 2011, total damage and loss amounted to THB 1.43 trillion (US\$46.5 billion), more than 13 percent of that year’s gross domestic product (GDP). But the financial impact on the government continued long after the water finally receded. The floods were estimated to reduce real GDP growth in 2011 by 1.1 percent from pre-flood projections, reduced Thailand’s current account to US\$11.9 billion from a projected \$20.6 billion, and caused a 3.7 percent loss in tax revenue from estimated pre-flood revenues (World Bank and Government of Thailand 2012). Financial losses from natural disasters continue to rise, with developing countries and their low-income populations feeling the greatest effects. Direct financial loss reached an average of \$165 billion per year during the last 10 years; with loss exceeding \$100 billion in six of those years (see Figure 1). This compares to about \$130 billion of official development assistance in 2012.



Source: Authors, with data from Swiss Reinsurance Corporation, country income groups according to World Bank definitions

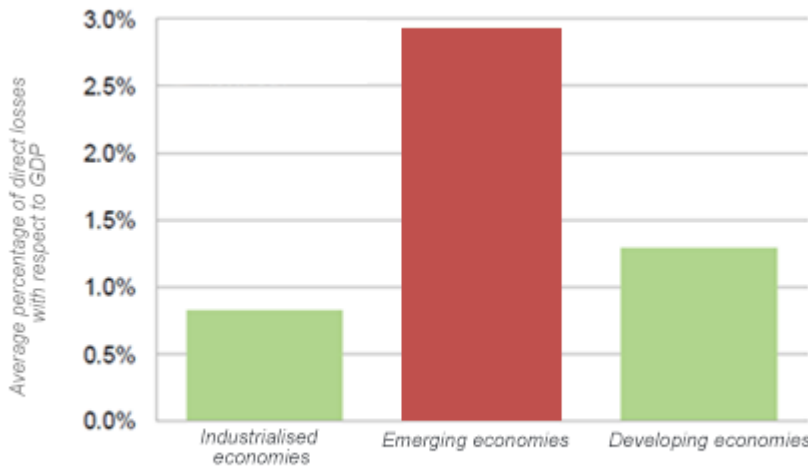
Yet the 2013 Global Assessment Report estimates that the actual losses are at least 50 percent higher, once smaller disasters are included (UNISDR 2013). The true impact of disasters is of course much higher still. These financial loss figures only account for direct loss, excluding indirect loss and the wider economic and human effects of disasters.

The trends in losses hide a wide range of impact. Events that are comparable in terms of physical parameters, total loss, or affected population, have a vastly different macroeconomic impact depending on a country’s level of development, size (geographic and population), and degree of insurance penetration. The relative share of this loss occurring in middle income countries has seen a steady upward trend over the past 30 years (in 2012 U.S. dollar). The rapid growth of assets exposed to hazards in middle-income countries—for example through urbanization and new infrastructure is likely responsible for much of this increase.



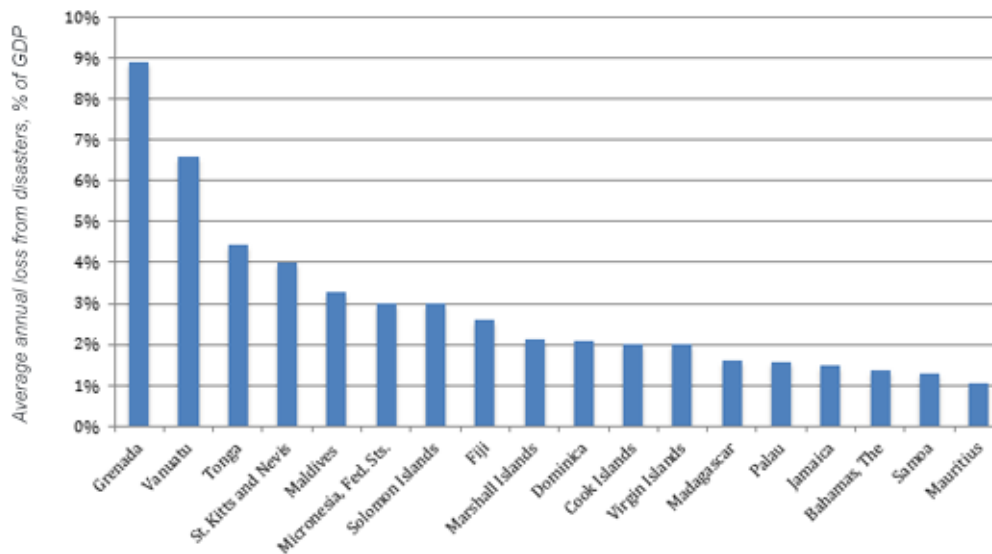
Source: Authors with data from Swiss Reinsurance Corporation

As a percentage of GDP, fast-growing middle-income countries suffer the most, with average annual direct loss at 2.9 percent of GDP, followed by low-income countries (1.3 percent of GDP) and high-income countries (0.8 percent of GDP) (Munich Re 2013). Much of this trend is due to the rapid increase of assets in developing countries that do not take disaster risk into account during construction, leaving them vulnerable to natural hazards. Although average direct loss relative to GDP is less for low-income countries, this does not consider the most important impact—the loss of lives, livelihoods and negative effects on human capital. The concentration of loss in small countries, and particularly in small island developing states, leads to even more severe macroeconomic effects.



Note: Loss figures from MunichRe NatCat Service; country groups according to World Bank 2012 classification. Source: MunichRe, 2013a

The devastation wrought by 2004's Hurricane Ivan in the Caribbean caused economic loss almost double the annual GDP of both Grenada and the Cayman Islands as well as significant damage in Jamaica, a stark reminder of the catastrophic devastation disasters can inflict (Young and Pearson 2008). Small island states across the Caribbean and Pacific bear average losses exceeding over 3 percent of their respective GDP every year (World Bank and United Nations 2010; Pacific Catastrophe Risk Assessment and Financing Initiative [PCRAFI] 2011).



Source: Prepared by World Bank, based on historical disaster damage reported in the EM-DAT Disaster Database (www.emdat.be), and for Pacific Islands on modeled annual losses from cyclones, earthquakes and tsunamis.

Recent analysis has found that, on average, in a small country the occurrence of a major disaster reduces GDP growth by 1.2 percent, with a cumulative permanent loss of 3.7 percent of GDP (von Peter, et al. 2012).⁵ This compares to an average for all countries of 0.8 percent decline in GDP growth per disaster occurrence and a cumulative, permanent loss of 2.4 percent, emphasizing the heightened vulnerability of these countries.