Part I

The Globalised Landscape of Disaster Risk

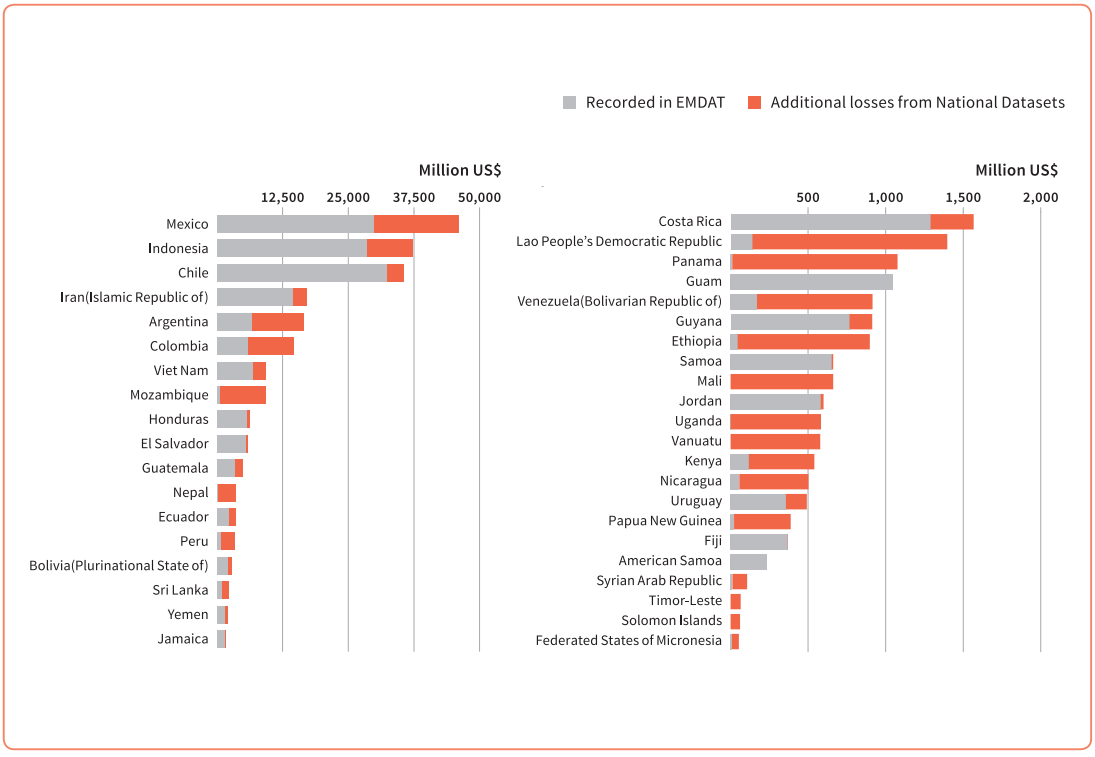
"One trillion dollars have been lost in the last decade due to disasters and one million people killed".[i] Such statements are familiar to investors and business developers. But they only partially reflect total disaster losses.

The full scale of disaster losses is still not fully understood. Reliable data exist on insured losses[ii] and many major, intensive disasters are comprehensively assessed.[iii] Between 2001 and 2011, global reinsurer Munich Re. reported about US$1.68 trillion in losses (Munich Re., 2012), a calculation based on insured losses and estimates of insurance market penetration. Over the same period, EMDAT[iv], the major public global disaster database, reported US$1.25 trillion in losses. But neither provides a complete picture of global disaster losses, as none accounts for uninsured losses associated with recurrent, smaller-scale, extensive disasters, particularly in low and middle-income countries.

A growing number of national disaster databases now provide access to detailed data on these losses. When combined with assessments of direct losses in major disasters as recorded by EMDAT, these data provide a more complete picture of the real dimension of direct disaster losses. Figure I.1 shows what this picture might look like in the 40 low and middle-income countries with the largest losses recorded in national disaster databases.

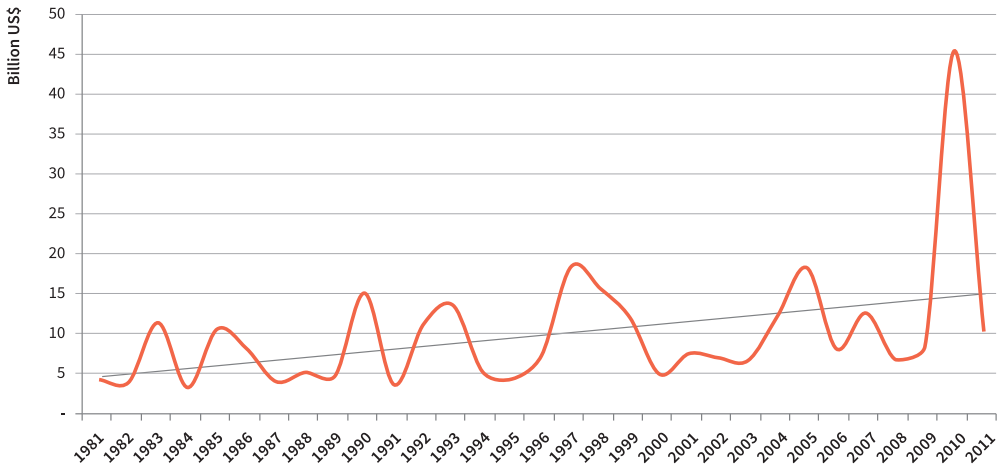
Direct economic losses in housing, local infrastructure and agriculture were modelled for all smaller disasters documented by national disaster databases but not captured by EMDAT. Losses documented in EMDAT for larger disasters include estimates of damage to large capital intensive infrastructure that are generally not captured in national disaster databases. The resulting combined dataset provides the most complete estimate of direct disaster losses possible with

Figure I.1 Direct economic losses in 40 countries as estimated from national and global loss databases, 1981–2011 (in million US$)[v]



(Source: UNISDR, based on DesInventar and EM-DAT combined datasets)

Figure I.2 Loss trends in 40 countries as estimated from national and global loss databases, 1981–2011 (in billion US$)[vii]



(Source: UNISDR, based on DesInventar and EM-DAT combined datasets)

existing publicly available data. The detailed methodology used to model and estimate economic losses is described in Annex 2.

Between 1981 and 2011, total direct losses in these countries were approximately US$305 billion, of which internationally reported events represent about 67 percent. The implication is that the headline-grabbing figures recorded in global datasets over the last decade may be quite conservative. Once the losses associated with nationally reported smaller disasters are included, those figures are likely to be at least 50 percent higher. At the same time, these figures refer only to direct losses and thus exclude the cost of indirect losses and wider effects of disaster.

As Figure I.2 shows, disaster losses in the same set of countries have been trending upward over this period.

The chapters that follow in Part I explore how investment decisions and capital flows are internalising disaster risk in different kinds of capital stock, thereby increasing the overall stock of risk.

Chapters 2 and 3 examine the new landscape of intensive and extensive risk and present results from the new global risk model for earthquakes and tropical cyclones, as well as new exposure data for tsunamis and regional examples for floods and landslides.

Chapter 4 features an analysis of the scale of economic losses associated with extensive risk, and Chapter 5, the implications for a country's economic and financial resilience.

The risks to natural capital posed by wild-land fires, land degradation and agricultural drought are presented in Chapter 6, and the special case of Small Island Developing States in Chapter 7.

Notes

i See for example: http://www.undp.org/content/undp/en/home/presscenter/events/2012/october/international_day_disaster_reduction.

ii Swiss Re. publishes regular updates on insured losses globally via its SIGMA statistics and publications (e.g. Swiss Re 2012). MunichRe., via its NatCatService platform and its Touch – Natural Hazards service portal, provides analyses, statistics and services on all aspects of natural hazards: http://www.munichre.com/en/reinsurance/business/non-life/georisks/natcatservice/default.aspx.

iii Governments, with the support of the UN, the World Bank or regional development banks, conduct economic assessments of intensive disasters using variations of the ECLAC methodology (ECLAC, 2003).

iv EMDAT: The OFDA/CRED International Disaster Database: www.emdat.net. Université catholique de Louvain – Brussels – Belgium. EMDAT is a global database that registers reports of disasters above its threshold of 10 deaths, 100 affected people, or a call for international assistance.

v Only the 40 countries with the highest losses were selected for this graph to enable visualisation at common scales. See Annex 2 for information on progress in the development of national disaster loss databases, economic loss estimation and merging of global and national datasets.

vi See www.munichre.com/touch/naturalhazards and www.emdat.be.

vii Only the 40 countries with the highest losses were selected for this graph to enable visualisation at common scales. See Annex 2 for information on progress in the development of national disaster loss databases, economic loss estimation and merging of global and national datasets.