

Briefing | Target 3

Economic losses from disasters

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This note provides information relevant to the agreement of target (iii) of the draft Post-2015 Framework for Disaster Risk Reduction (DRR), on economic loss, which reads: *[Substantially] reduce direct disaster economic loss [by a given percentage] in relation to GDP by 2030* and its variant (iii) alt.

Background

- Economic losses from disasters have exceeded \$100 billion annually for the period from 2010 to 2012.²
- Economic losses from disasters are widely considered to be increasing rapidly, because more assets are exposed to hazards.
- Risk of economic loss continues to rise globally, but particularly in high-income countries. For example:
 - The value of global gross domestic product (GDP) exposed to tropical cyclones tripled from \$525.7 billion in the 1970s to \$1.6 trillion in the first decade of the 2000s.³
 - From 1980 to 2009, economic loss risk to tropical cyclones increased by 262% in high-income countries, and by 155% in low-income countries over the same period.⁴

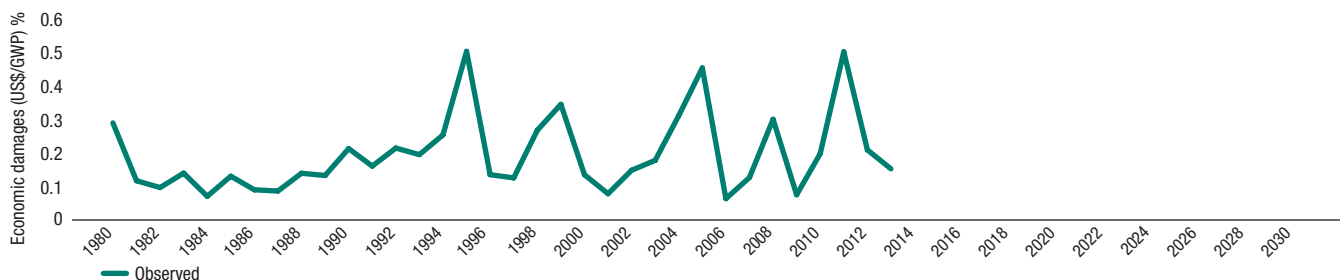
Economic loss:

The term ‘economic loss’ encompasses changes in wealth caused by damage to structures or other physical assets. These can be direct (those resulting from building and infrastructure damage) or indirect (those that follow on from physical damage). These can be reflected in market effects (e.g. loss of income owing to disaster-caused destruction) as well as non-market effects (e.g. loss of leisure time owing to longer commutes as a result of a disaster).¹

Past trends and projections

- Data on global economic disaster losses since 1980 adjusted by unit of GDP show an increase to the present day (based on 2013 values) from 0.116% to around 0.22% of gross world product.^{5,6}
- Economic losses are expected to be 161% higher in 2030 than they were in 1980.⁷
- Historic records of economic losses are greatly influenced by a small number of mega-disasters that dominate the level of global economic losses in any one year.⁸

Global economic losses related to gross world product (%), 1980-2013⁹



Distributional aspects

- The size and strength of a country's economy does not translate into lower economic loss risk.
- This said, it is vital to see economic loss from disasters as a proportion of a country's GDP. Over the period 2001-2006, losses amounted to about 1% of GDP for middle-income countries; this ratio was about 0.3% of GDP for low-income countries and less than 0.1% of GDP for high-income countries.¹⁰
- For example, economic losses caused by floods in South Asia are in absolute terms far smaller than for countries in the Organisation for Economic Co-operation and Development (OECD), but relative to the size of South Asia's GDP they are approximately 15 times greater.¹¹

Challenges in tracking economic losses:

- Accurate data on disaster losses are not available for many countries and refer mainly to direct measurable monetary losses (direct use values).
- Methodologies for monetising indirect losses are also absent or at a nascent stage of development.
- Only 36% of the events recorded from 1980 to 2013 in the Centre for Research on the Epidemiology of Disasters (CRED) Emergency Events Database (EM-DAT) contain data on economic losses, making it difficult to create effective baselines against which to measure progress.¹²
- It is not possible to establish a true statistical average for economic losses from only a few decades of national loss data.

- Moreover, severe hazard events and major disasters responsible for substantial economic losses can be so rare in any one region that they are not taken into account within the time period for a baseline.
- An example of this is for Haiti, where earthquakes killed fewer than 10 people between 1900 and 2009 before over 220,000 people were killed in a single afternoon in 2010.¹³
- By some estimations, in low- and middle-income countries accumulated losses from small-scale, highly frequent and localised disaster events (that are more difficult to track) approach the magnitude of those from major disasters.
- Measuring disaster losses requires the normalisation of data for key variables, like population or GDP, to allow for comparisons between time periods.
- Modelling could help provide estimates of economic losses where data are missing, which in turn could support baselining processes. These models employ data from past events to calculate the consequences of future events by analysing the interaction of factors that cause losses and then extrapolating these.

Implications for targets in the Post-2015 Framework for DRR

Based on an assessment of country-level evidence and relative trends related to mortality risk and economic loss risk, a proposed target of reducing economic losses from all disasters by 20% (per unit of GDP) by 2030 could be set. We consider this highly ambitious, given the background trend in many countries of increasing exposure of economic assets. This aligns with target '(iii) alt', currently under discussion.

1. Klieson, K.L. (1994) 'The Economics of Natural Disasters', <http://bit.ly/18hkWdM>
2. UNISDR (UN International Strategy on Disaster Risk Reduction) (2013) *Global Assessment Report on Disaster Risk Reduction 2013: From Shared Risk to Shared Value: the Business Case for Disaster Risk Reduction*. Geneva: UNISDR.
3. UNISDR (UN International Strategy on Disaster Risk Reduction) (2011) *Global Assessment Report on Disaster Risk Reduction 2011: Revealing Risk, Redefining Development*. Geneva: UNISDR <http://bit.ly/1N92Jzz>
4. UNISDR (2011).
5. Mitchell, T., Guha-Sapir, D., Hall, J., Lovell, E., Muir-Wood, R., Norris, A., Scott, L. and Wallemacq, P. (2014) *Setting, Measuring and Monitoring Targets for Reducing Disaster Risk: Recommendations for Post-2015 International Policy Frameworks*. London: ODI.
6. This is by calculating a trend.
7. Mitchell et al. (2014), using Poisson estimation over the period 1980-2030. It is, however, important to take cognisance of the fact that historical trends cannot always be relied on to derive projections accurately.
8. For this reason, projection and trend calculations need to be treated with caution.
9. Drawing on <http://data.worldbank.org> and www.emdat.be
10. IPCC (Intergovernmental Panel on Climate Change) (2012) *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. Special Report of Working Groups I and II of the IPCC*. Cambridge and New York: Cambridge University Press.
11. UNISDR (UN International Strategy on Disaster Risk Reduction) (2011) *Global Assessment Report on Disaster Risk Reduction 2011: Revealing Risk, Redefining Development*. Geneva: UNISDR <http://bit.ly/1B2mfYf>
12. Mitchell, T., Guha-Sapir, D., Hall, J., Lovell, E., Muir-Wood, R., Norris, A., Scott, L. and Wallemacq, P. (2014) *Setting, Measuring and Monitoring Targets for Reducing Disaster Risk: Recommendations for Post-2015 International Policy Frameworks*. London: ODI.
13. Mitchell, T., Guha-Sapir, D., Hall, J., Lovell, E., Muir-Wood, R., Norris, A., Scott, L. and Wallemacq, P. (2014) *Setting, Measuring and Monitoring Targets for Reducing Disaster Risk: Recommendations for Post-2015 International Policy Frameworks*. London: ODI.

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