

Briefing | Target 1

Disaster mortality

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This note provides information relevant to the agreement of target (i) of the draft Post-2015 Framework for Disaster Risk Reduction (DRR), which reads: *Reduce disaster mortality per capita by 2030* and its variants (i alt bis.).

Disaster mortality

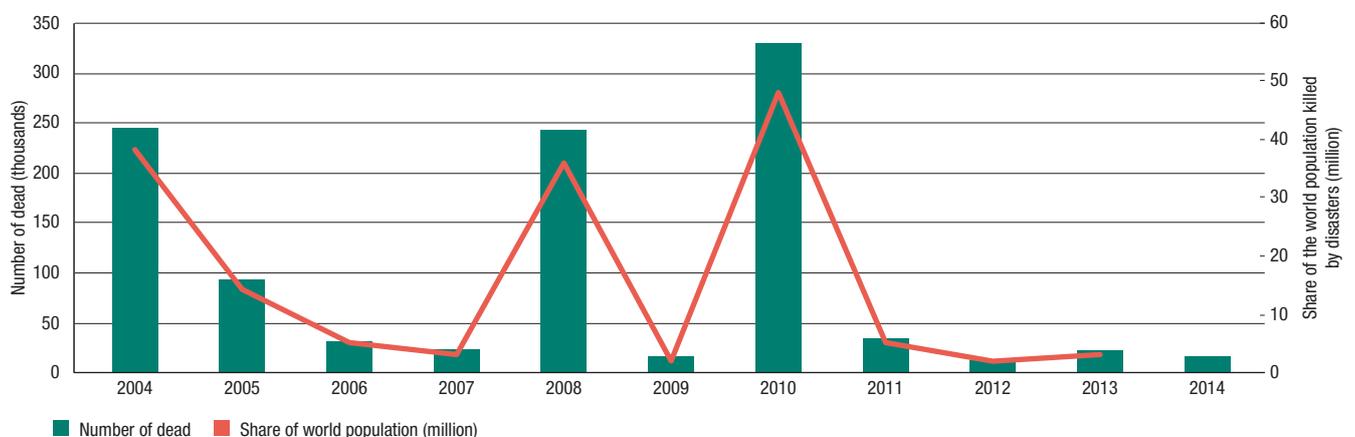
Disaster mortality refers usually to the number of confirmed dead or those found missing and presumed dead as part of the disaster and after the impact of a disaster event. Deaths as a result of disasters are a common proxy for the severity of an event. As such, they are a lever for humanitarian aid and for resource allocation during emergencies.¹

Of the total number of people who die from disasters globally, most perish in only a few very large events. This explains why more than 1 million people died as a result of natural disasters between 2004 and 2014 but the period from 2012 to 2014 accounted for only 49,000 of these deaths.

Moreover, just three disasters – the Indian Ocean tsunami (2004), Cyclone Nargis (2008) and the Haitian earthquake (2010) – accounted for close to 60% (or 580,000) of deaths in this decade.²

Mortality from disasters over the past 30 years has increased slightly in absolute terms but disaster deaths as a percentage of the total population are declining. Although high variability between disaster mortality each year makes projecting future losses extremely difficult, the limited evidence available suggests the next 15 years could see a further decrease in disaster-related deaths per million of population.³

Number of deaths and share of population killed by disasters recorded over the past 10 years⁴



Distribution of mortality risk

Mortality risk for all weather-related hazards continues to be concentrated in countries with low gross domestic product (GDP) and weak governance.⁵

- More women than men die in disasters. This difference is linked directly to women's economic and social rights. Discrimination often means women suffer more of the longer-term impacts. Discrepancies are also the result of inequalities and preferential treatment during rescue efforts.⁶
- 1.5 times as many women as men died during the 1995 Kobe earthquake, and 3 times as many women as men died in the 2004 Asian tsunami; age and income level were contributing factors.⁷
- Children make up a large proportion of those who are most vulnerable to disasters.⁸
- Women, children, the elderly, slum dwellers and the poor are often the first victims of disasters. They may be at a higher mortality and morbidity risk.⁹
- In the period from 1980 to 2013, earthquakes (seismic activity) accounted for 38% of all deaths from disasters, followed by drought (24%) and storms (19%).¹⁰

Recording and measuring disaster mortality

Key challenges in tracking disaster mortality:

- Lack of a shared definition of what constitutes a disaster and shared methodologies of recording mortality across the world is an important barrier to tracking the impact of disasters. The result is a highly uneven and variable recording of mortality in national/subnational disaster databases across the globe.
- Keeping the severity of the hazard in perspective is key to accurately gauging progress made on reducing disaster mortality, but rigorous data on the severity of different hazards are scant.

Key issues in measuring mortality and creating baselines:

- Establishing statistical averages for mortality from only a few decades of loss data is risky because a single extreme event can skew such data. Past impact data help establish risk factors and provide insights into trends over the past decades, but their ability to predict future scenarios is limited, especially for certain types of disasters.
- It is important to deploy other methods, such as catastrophe modelling, which can help calculate the risk of losses. These models employ data from past events to calculate the consequences of future events by analysing the interaction of factors that cause mortality, creating a synthetic record of potential hazards and then extrapolating these. Models need to be further developed with multidisciplinary inputs and specifically for low-resource settings or urban areas in the developing world.
- Disaster risk management (DRM)/DRR policies that combine observed data with predictive models can enhance monitoring and the prevention of mortality.

Implications for targets in the post-2015 framework for DRR

- The points above outline the manner in which calculating statistical averages for disaster mortality is fraught with problems; targets '(i) alt.' and '(i) alt. bis' in the current draft of the framework aim to track progress using averages.
- None of the targets on mortality are sensitive to the intensity/severity of hazards, which impedes accurate measurement of progress.
- Another key gap is that none of the seven current targets addresses the distributional aspects of disaster mortality and the fact that more women than men die as a result of disasters.
- It is encouraging to see numerous mentions of disaster risk modelling in the current draft.

1. Mitchell, T., Jones, L., Lovell, E. and Comba, E. (2013) *Disaster Risk Management in Post-2015 Development Goals: Potential Targets and Indicators 2014*. London: ODI.

2. <http://bbc.in/1zDVV8f>, <http://bbc.in/1wEgILY>, <http://bbc.in/1vTBKTb>, all accessed 24 February 2015.

3. Because of the high volatility of mortality, projections need to be treated with caution.

4. Centre for Research on the Epidemiology of Disasters (CRED) Emergency Events Database (EM-DAT), authors' calculations.

5. Mitchell T., D. Guha-Sapir, J. Hall, E.Lovell, R. Muir-Wood, A. Norris, L. Scott and P. Wallemacq (2014) *Setting, Measuring and Monitoring Targets for Reducing Disaster Risk: Recommendations for Post-2015 International Policy Frameworks*. London: ODI.

6. Neumayer, E. and T. Plümper (2007) 'The gendered nature of natural disasters: the impact of catastrophic events on the gender gap in life expectancy, 1981–2002' *Annals of the Association of American Geographers*, 97 (3).

7. IWPR Institute for Women's Policy Research (2010) 'Women, Disasters, and Hurricane Katrina'. Factsheet #D492, August. Washington, DC: IWPR.

8. UNISDR (2011) *Global Assessment Report on Disaster Risk Reduction*. Geneva, Switzerland: United Nations International Strategy for Disaster Reduction.

9. Bourque L.B., J. M. Siegel, M. Kano, M.M. Wood (2007) 'Morbidity and Mortality Associated with Disasters' in *Handbook of Disaster Research*, New York: Springer. Tierney, K. J., M. K. Lindell, and R. W. Perry (2001). *Facing the Unexpected: Disaster Preparedness and Response in the United States*. Washington, D.C.: Joseph Henry Press.

10. Mitchell T., et al. (2014) *Setting, Measuring and Monitoring Targets for Reducing Disaster Risk: Recommendations for Post-2015 International Policy Frameworks*. London: ODI.

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