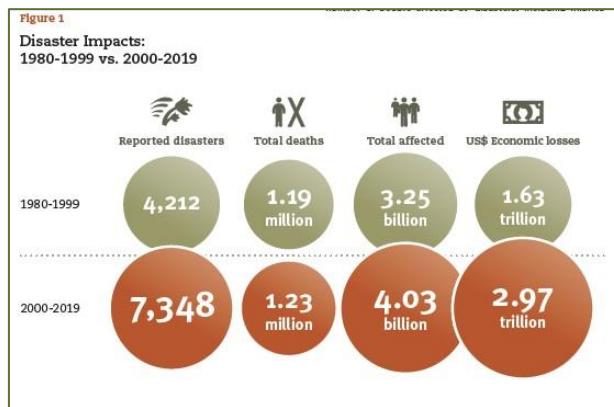


A critical analysis of the UN report on the costs of natural disasters.

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With aim to draw attention to a frightening future menaced by an increase of disasters, mainly due to the anthropogenic warming of the planet, statistics are presented, which at first sight appear alarming. However, the numbers have not been corrected for growth of population and of infrastructure. Here an attempt is made to adjust the statistics for these factors by normalizing the numbers for increased exposure.

United Nations report gives a summary of the effects of natural disasters, the number of which has increased (**74%**), if the two decades 2000-2019 are compared to 1980-1999*.



Death toll	Millions or %	Normalized
1980-1999	1.19	
2000-2019	1.23	1.56 (=1.19 x 1.32)
Apparent increase	3.4%	
Population increase	32% (or 1.32 x)	
Adjusted change	- 21%	Less impact (1.23/1.56)
People affected	Millions or %	Normalized
1980-1999	3.25	
2000-2019	4.03	4.26 (=3.25 x 1.32)
Apparent increase	24%	
Population increase	32% (or 1.32 x)	
Adjusted change	- 6%	Less impact (4.03/4.26)
Economic damage	Trillion dollars or %	Normalized
1980-1999	1.63	
2000-2019	2.97	3.21 (=1.63 x 1.97)
Apparent increase	82.2%	
Infrastructure increase	97.1% (or 1.97 x)	Based on 3.45%/yr GDP growth, 20 years = 1.97 x
Adjusted change	- 7.5%	Less impact (2.97/3.21)

Despite a very significant increase in number of disasters, and, of course increases in actual numbers, is the situation actually much better than suggested by the UN graph!

It is **extremely** misleading not to correct the figures with population and infrastructure growth. It appears that the world is more resilient and somewhat better equipped to mitigate the effects of disasters. The increase in numbers of disasters indicates possibly a combination of two effects: Incomplete recording in the first two decades* and that the “average” disaster in the second two decades does less harm.

Note that the infrastructure does not include housing. As that should be added to the infrastructure and has also grown very significantly over the four decades, this would add to the “improvements”, but is difficult to quantify because of lack of easily accessible data.

Climate as a cause?

Of the numbers of disasters, 10% is not climate-related (Earthquakes, Tsunamis and Volcanos). The rest is a mix of disasters that can be largely attributed to the climate and weather. With regard to **death toll**, it should be noted that in the first two decades 16% is due to earthquakes, in the second two decades this is 59%. To contribute the increase in death toll to the climate change is already for this reason untenable. The increase in human and economic costs is amply explained by population growth and growth of infrastructure (“exposure”). That means that **climate change** has had no effect on these costs, or the increase in resilience has completely compensated, or even over-compensated for any negative effect of climate change. According to Occam’s Razor, we should opt for the first, simplest explanation.

Based on:

<https://www.unrr.org/publication/human-cost-disasters-overview-last-20-years-2000-2019>

Population increase and GDP growth/ Infrastructure investments from several public databases.

investopedia.com/terms/i/infrastructure.asp

Population increase and GDP growth/ Infrastructure investments from several public databases.

[McKinsey \(2016\) “Bridging global infrastructure gaps”.](#)

https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD

* A caveat that is mentioned in the UN report.