

Global disasters: Patterns, impacts and Angelina Jolie

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On Saturday the 4th of September 2010, Canterbury woke up to a devastating 7.1 magnitude earthquake. It transformed New Zealand's second largest city into a ghost town in seconds. Call it a disaster; catastrophe, mass emergency, whatever; it is a clear example of "chaos, disorder and trauma". Add this to a long list of events that have occurred this year: Haiti, Chile and Yushu county, China, all experienced massive earthquakes; Pakistan is flooded with over 22 million people displaced; the Icelandic volcano, Eyjafjallajökull, erupted, disrupting worldwide air travel for days; the Gulf of Mexico leaked oil for weeks at a rate faster than New Zealand can produce it; planes have crashed killing hundreds; an aid ship to Gaza was attacked; and a stampede at Berlin's Love Parade killed and wounded many. These are just a few global events that interested the media enough to report them. Hundreds of similar events did not feature in our selective media channels.

Here, we are dealing with our own sorrow and devastation after the Canterbury Earthquake. This article will briefly review the pattern of global disasters and discuss such events in terms of their human and economic impact. Such global events are a trigger for humanitarian missions. The topic of global disasters is vast, with many political, economic, and emotional issues attached to it. To look at all the facets of global disasters would be a daunting task. This article will be a brief introduction to global disasters, and will present two lessons to be learnt from recent humanitarian responses to the Haiti Earthquake and the Pakistan Floods.

What is a disaster?

The term "disaster" derives from the French *désastre* and Old Italian *disastro*, which, in turn, come from the Greek pejorative prefix *δυσ-* (*dus-*, meaning "bad"), and *ἀστρον* (*aster*, meaning "star"). The root of the word disaster ("bad star" in Greek) is believed to originate from the ancient astrological sciences, in which the Greeks referred to the destruction or deconstruction of "bad stars" as disasters¹.

In spite of these deep roots, the modern "disaster" has no unified definition and different disciplines define the term differently. A widely accepted definition used by the World Health Organisation and the United Nations is as follows:

"the result of vast ecological breakdown in the relationships between man and his environment, a serious and sudden (or slow, as in drought), disruption on such a scale that the stricken community

*needs extraordinary efforts to cope with it, often with outside help or international aid"*².

This definition implies that it is the impact and consequences of the event that constitute a disaster, rather than the event itself. It is important to appreciate that the classification of disasters into "man-made" and "natural" is specifically for the event itself, rather than the impact. For example, the Canterbury earthquake is a natural disaster; but the impact of the event depends on the interplay between natural factors (such as the location of the quake) and man-made factors (such as the level of preparedness for earthquakes). In short, the trigger for a disaster can be natural or man-made, but the impact is almost always a result of mixed factors. Furthermore, this broad definition clarifies that a specific number of casualties does not define a disaster; rather it is the negative impact and magnitude of disruption resulting from the initial event. Additionally, the concept of "disaster" is relative to the context in which the event manifests. For example, a Motor Vehicle Crash (MVC) with multiple casualties in a large metropolitan hospital may go relatively unnoticed; meanwhile the same crash in a small rural Emergency Department (ED) will probably mandate the activation of the hospital disaster plan. Regardless of the exact definition, a sense of disruption, chaos, trauma, and suffering resounds.

The pattern of global disasters

The impact of disasters on the global community is beyond comprehension. In the last 50 years, more than 10,000 disasters are reported to have affected over five billion people^{1,3}, and have an estimated death toll in excess of 12 million people. In the year 2009 alone, 335 natural disasters were reported. 10,665 people were killed as a direct result, and the disasters impacted on the lives of 119 million others. The overall reported direct economic cost of natural disasters in the last 50 years is estimated at more than US\$1 trillion.² However, this is a huge under-estimation, as only 24% of natural disasters have an economic cost reported.³ Thus, the actual cost would be nearer to US\$4 trillion.

Four main features of the current global pattern of disasters are of great concern. Firstly, there is an increasing frequency of disasters. Secondly, there is an associated alarming increase in the cost of these disasters³. Thirdly, natural disasters are affecting more and more people, in spite of a decline in mortality attributable to the same disasters. Lastly, in contrast, the number of people reported to be killed in technological disasters, it is showing the opposite pattern, as deaths are increasing in the face of a decline in the total numbers affected.

¹ The number of affected people appears inflated since many societies have been victims of repeat disasters.

² This data must be viewed with caution as it is not known how many of the actual disasters have been reported and only 24% of the reported disasters have an indication of direct economic costs. Furthermore, this figure only represents natural disasters. Therefore man-made disasters such as the Sudanese and Afghan conflicts do not feature in the estimates.

³ Given the lack of a standardised reporting system for global disasters, the non-availability of a robust database and the absence of universal definitions, it is essential to assume that the statistics used in this discussion are, at best, underestimations. Nevertheless, the general trends of global disasters are apparent.

Figure 1. Global natural disaster pattern (1975-2009)

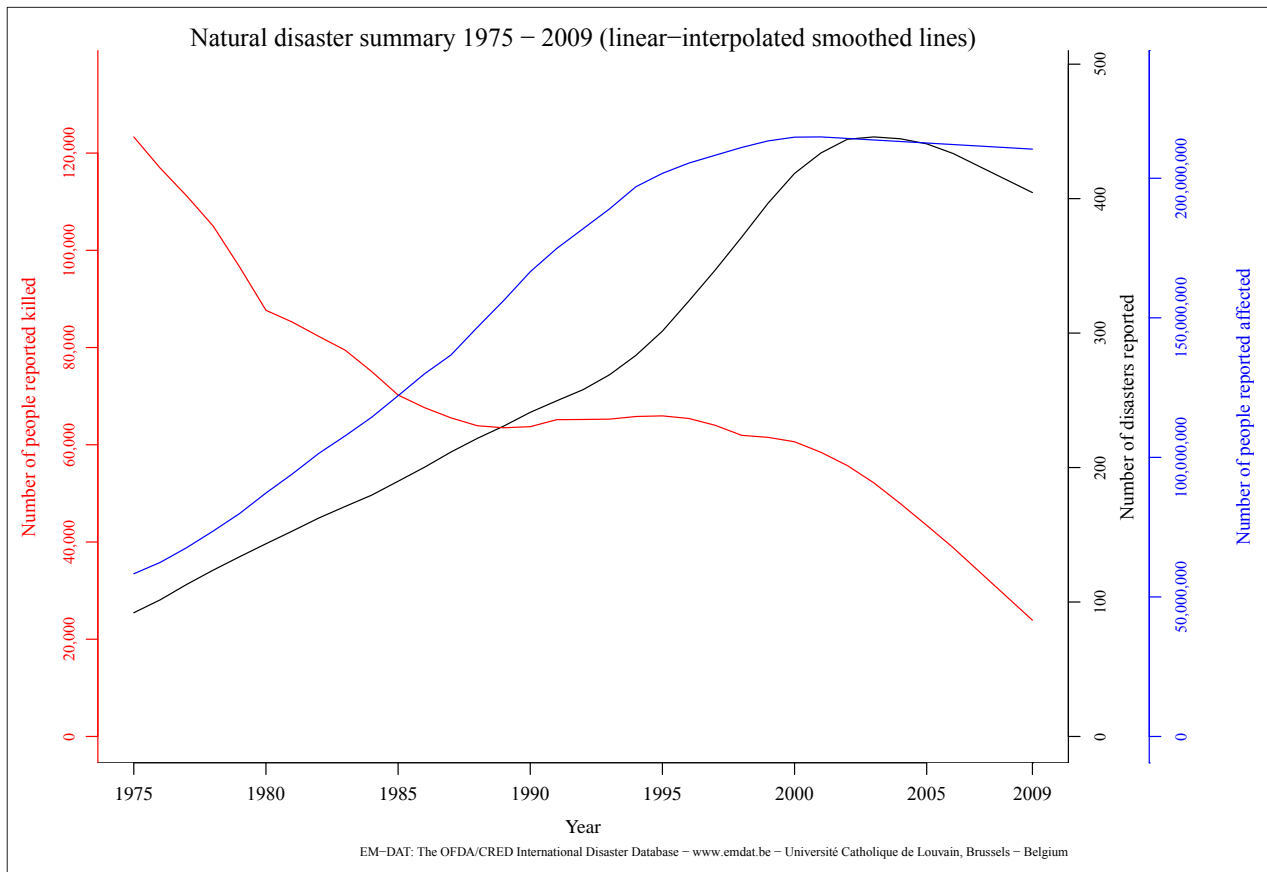
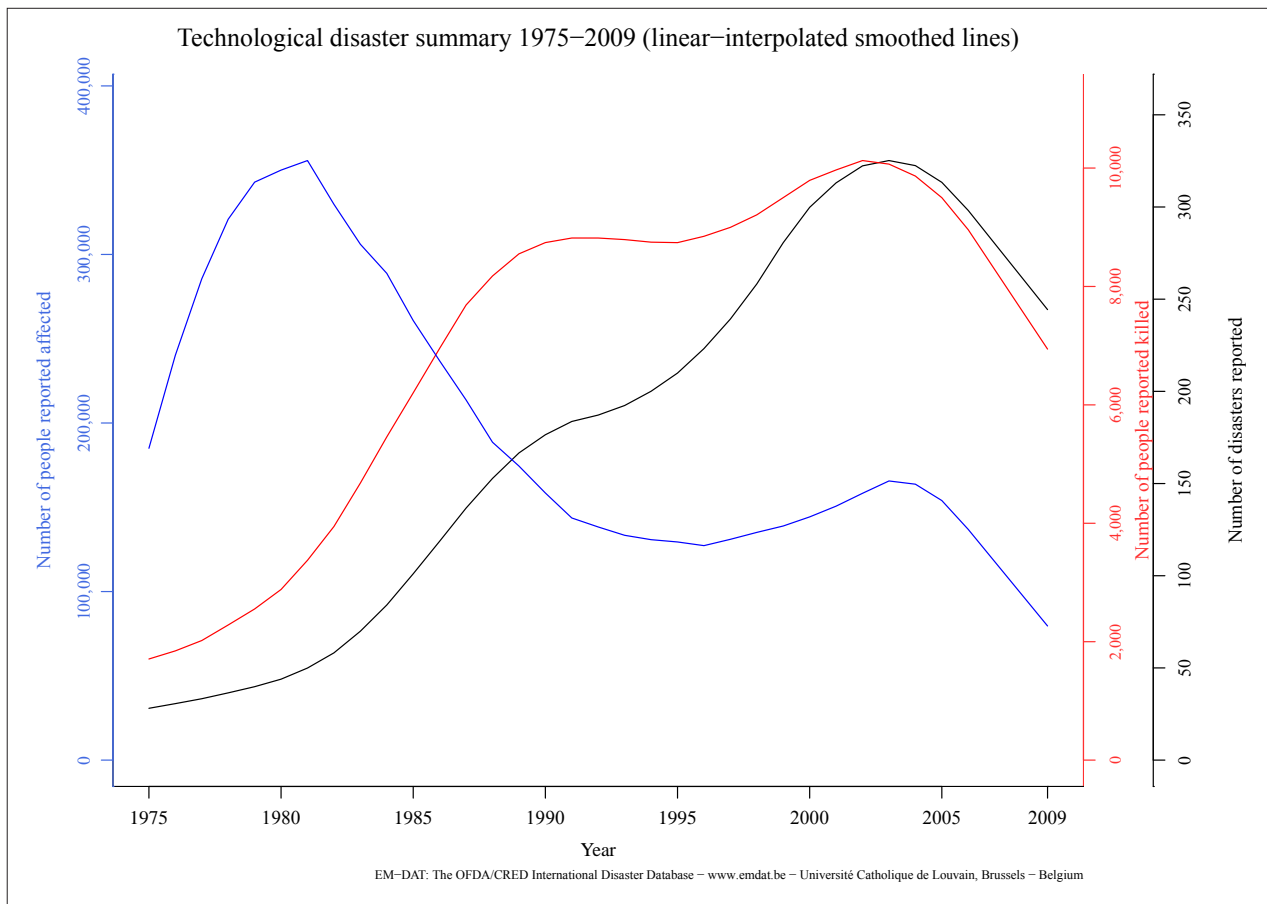


Figure 2. Global technological disaster pattern (1975-2009)



The human impact of global disasters

In terms of human cost, the effects of disasters are usually calculated by the number of people killed by the initial incident. For example, in 1993, more than half a million people were killed in the civil war in Rwanda⁴; an earthquake in China in 1976 killed at least 225,000; in Bangladesh, 300,000 people were killed in 1970 and 135,000 others in 1991, from flash floods⁵.

Complex emergencies are events that cause unprecedented, massive human migration from one place to another. They are usually the result of a war or natural disaster. The number of Internally Displaced People (IDP; people who leave their homes, but stay within the national borders) is currently the highest recorded in human history, with 27.1 million IDP around the world⁶. The number of IDP is far larger than the number of refugees (people who flee their homes across national borders to other countries), which was estimated to be 15.4 million people in early 2009.⁷ Such human movement exposes people to different hazards and increases their vulnerability to illness and injury. These global issues are complex and will not be resolved without global willingness and action.

Deaths are only a fraction of the total cost of disasters. Millions are physically and emotionally harmed because of such events. Nations can be left incapacitated for long periods, as generations of children grow up without families, but with terrifying memories of loss and trauma, and living with vast amounts of grief. The human cost of disasters extends well beyond the number killed or displaced; it includes things such as increased divorce rates, family instability, suicide rates, alcoholism, drug dependency, and inequalities in education and health care. The lasting human cost of disasters is beyond imagination's limits and is only partly due to the collapse of community services as a result of the disaster itself.⁶

The economic impact of global disasters

Along with the human cost, comes an economic cost. The global economic impact of disasters is high and rising.³ The cost of the Kobe Earthquake in Japan in 1995 was estimated to be more than US\$100 billion.⁸ The estimated cost to the company responsible for the Bhopal gas leak tragedy of 1984 was approximately US\$470 million.^{9,10}

It is important to appreciate that the economic cost of disasters does not reflect the devastation and suffering, or the death toll. For example, the Northridge California Earthquake in 1994 killed 33 people with a cost of US\$40 billion, while 300,000 people were killed in the Boxing Day Tsunami with an economic impact around US\$45 billion.¹¹ This shows a huge contrast, with 10,000 times more human lives lost for a similar economic cost. Furthermore, the cost of disasters is higher among under-resourced nations. For example, the impact of Hurricane Mitch on Honduras and Nicaragua was double the combined Gross Domestic Product (GDP) of both countries.³

The global humanitarian response to disasters

Global disasters create an outpouring of humanitarian assistance to affected nations. This flow of goodwill reflects the universality of the "humanity" concept, which many humanitarian organisations subscribe to. The "humanitarian response" is the innate altruistic urge to assist fellow human beings in their time of suffering.¹² The strength of this response can be affected by multiple factors including: the distance between responder and sufferer (in the case of the Canterbury Earthquake, it is our own people who are suffering, thus we have a strong response); the suddenness of the event (for example, the dramatic and sudden impact of the Haiti earthquake); and the ability to empathise with the victims (for instance, the many Western tourists during the Boxing Day Tsunami in 2004). Furthermore, natural disasters are likely to elicit a larger humanitarian response than civil wars, because victims are viewed as blameless.¹³

The concept of a global humanitarian response to crises was observed to become an identifiable phenomenon sometime during the Rwandan genocide in the mid-1990s.⁴ Since then, humanitarian response has developed very rapidly, as the frequency of international disasters increases in an unprecedented manner. Today, humanitarian response is complex and functionally complicated. Two lessons from the humanitarian response to the Haiti Earthquake and the floods in Pakistan are presented below.

A lesson from Haiti

On 12 January 2010, a 7.0 magnitude earthquake crumbled Haiti's capital city to the ground. The global community watched as this devastating event resulted in an outpouring of international aid, and disaster relief teams raced to Port-au-Prince. Soon, however, questions were raised; was this all in the name of providing help for Haiti's people, or was it the emergence of a new industry called "medical disaster tourism"?

A story narrated by a South African response team exemplifies this:

"One afternoon, out of the blue, two other international medical teams arrived in our location. While we welcomed the prospect of additional hands, the attendant media group was unexpected. Without any consultation with any parties on-scene, the new medics started to see patients, leading to unnecessary re-assessments, duplicating painful wound checks, and so on: all in the glare of the television cameras. Often stopping to be interviewed by the television crew or to pose for photographs, they eternalized their humanitarian deeds. The patients, unable to communicate due to language barriers, appeared to accept the care (after all, these foreigners are experts who travelled thousands of miles just to help them: who wouldn't be thankful?). Just then, an elderly man arrived with a badly injured leg. After our assessment, it was clear that his prognosis was very poor, and we suggested conservative management due to the extremely limited local resources. The other team, however, demanded that the man be operated on and that they will assist because of their "extensive surgical experience". The television crew captured every moment, including a dramatic last minute interview with the new "surgeon". As may be expected, everything that could go wrong went wrong, and the patient died. The "surgeon" subsequently informed us that he is actually a general practitioner who did some surgery about 20 years ago. The bus arrived, the medical crews got onboard with the media entourage, and after a last "did-what-I-could" shrug of the shoulders—we had our last view of the medical disaster tourists. Then, the deceased man's family arrived, being (understandably) very upset and angry. They demanded an explanation from us; what could we tell them? We had no reasonable answers to provide"¹⁴

These sorts of acts clearly damage the reputation of the global humanitarian medical response and raise many questions. Surely, there are more good-doers than disaster tourists in Haiti. As medical professionals, however, we scrutinise our actions during peacetime and we must continue to do the same during disasters. Many disaster-medical "tourists" arrived in Haiti perhaps with the best of intentions, but without proper planning, they may have caused more harm than good. Lack of planning puts stress on already-scarce local resources, including water, shelter, and food.

Disaster medical tourism has huge legal implications and there is a pressing need to establish international laws for the accountability and credibility of international health responders. It is a medical shame to embark on a humanitarian mission for the sake of fame and the world's spotlight, and the risk of adding to a disaster's impact must be avoided.

A lesson from Pakistan

Pakistan is a country well known for its history of natural disasters and continuous political conflicts. During the monsoon season this year, the country was submerged by one of its worst ever floods. The global community has failed to appreciate the magnitude of the disaster in Pakistan and aid is lagging behind the huge needs of the Pakistani people. The National Disaster Management Authority in Pakistan reports that at least 20 million people are affected. This is more than the 2004 Indian Ocean Tsunami, Kashmir earthquake, and Haitian earthquake combined, and the floods cover an area roughly the size of New Zealand. Around 1802 people have died, 2994 people have been injured and 1.9 million houses have been damaged.¹⁵ In some areas the floods have destroyed over 87% of crops, leaving the potential for widespread famine to emerge as a serious secondary disaster.¹⁶ The United Nations Secretary General Ban Ki-moon has asked the global community to step up and hasten the provision of relief operations. He has estimated that the initial rapid emergency response effort will cost NZ\$630 million. At time of writing, the support to Pakistan by the global community is only around 43% of the

estimated requirements.¹⁷ In comparison, the donations after the Pakistan Earthquake in 2005 were over NZ\$7 billion, even though the total impact of the earthquake was only a fraction of that of the current flooding.¹⁸ This global desensitisation is accompanied by media fatigue and a "just another boring disaster" attitude. A study conducted by the Project for Excellence in Journalism found that the floods in Pakistan took up only an average of four percent of the available global news for the week of August 16-22. In contrast, the Haiti earthquake took up 41 percent of the news stories for the week of January 11-17.¹⁹

There are many reasons why the global community's help to Pakistan is lagging behind the magnitude of the disaster. The first reason is purely political rather than humanitarian. The global community is hesitant to provide emergency funds to Pakistan that could potentially be used to fuel insurgent groups. This fear, however, does not justify the "wait and watch" strategy applied to such a human tragedy. Another reason is that the relatively insidious nature of floods, when compared with the sudden and abrupt nature of earthquakes, results in a global response fatigue.¹²

After the failed call of Ban Ki-moon to stimulate the global community to speed up the provision of aid to Pakistan, the UN tried another tactic, sending Hollywood stars to the disaster zone. These stars included Angelina Jolie, and their aim was to raise the profile of the disaster amongst the international community. Angelina described the situation in Pakistan by saying: "People have lost everything; their homes, their belongings, their crops and cattle, and their livelihoods. Long after the cameras have gone, people will be struggling to rebuild their lives".²⁰ It is truly a heart-wrenching reality that the global community is blind to such a tragedy. Shame on the world and good on you Angelina!

In summary, global disasters are on the rise and so is their impact in terms of the human and economic cost. Global humanitarian responses must be more coordinated, accountable, and "humanity-driven", rather than politically controlled. The earthquake in Canterbury was a timely reminder that disasters occur where, and when, no one expects them to. Thus, communities must be prepared to deal with such damaging events. Global aid cannot be totally relied upon, so integrating disaster preparedness into community development and daily activity is important to ensure the best possible outcomes when disaster strikes.

REFERENCES

1. Lopez-Ibor J.
What is a Disaster?
*Disasters and mental health*2005:1.
2. Gunn S.
Multilingual dictionary of disaster medicine and international relief.
Boston: Kluwer Academic Publishers; 1990.
3. Sundnes K, Birnbaum M.
Health disaster management: Guidelines for evaluation and research in the Utstein style.
*Prehosp and Disast Med*2003;17(suppl 3):31-55.
4. Domres B, Mang A.
The flight from Rwanda in 1994: what were (are) the priorities?
Prehospital and disaster medicine: the official journal of the National Association of EMS Physicians and the World Association for Emergency and Disaster Medicine in association with the Acute Care Foundation;12(1):47.
5. VanRooyen M, Stickler J, Brennan R, Greenough P.
Challenges of Humanitarian Health Response to Disasters and Crises.
*Prehospital and Disaster Medicine*2007;22(5):349.
6. Burkle Jr F.
Future humanitarian crises: challenges for practice, policy, and public health.
Prehospital and disaster medicine: the official journal of the National Association of EMS Physicians and the World Association for Emergency and Disaster Medicine in association with the Acute Care Foundation;25(3):191.
7. United Nation High Commissioner for Refugees [database on the Internet].
[cited 15th June 2010]. Available from: <http://www.unhcr.org>.
8. Horwich G.
Economic lessons of the Kobe earthquake.
*Economic Development and Cultural Change*2000;48(3):521-42.
9. Dhara R, Acquilla S, Cullinan P.
Has the world forgotten Bhopal?
*Lancet*2001;357(9258):809.
10. Shrivastava P.
Bhopal: Anatomy of a crisis.
Sage Publications Ltd; 1992.
11. Eguchi R, Goltz J, Taylor C, Chang S, Flores P, Johnson L, et al.
Direct economic losses in the Northridge earthquake: a three-year post-event perspective.
*Earthquake Spectra*1998;14(2):245-64.
12. Anonymous.
Growth of aid and the decline of humanitarianism.
Lancet. [Editorial]. Jan 23;375(9711):253.
13. Holmes S.
Health and Emergency Response: Emerging Humanitarian Challenges.
Prehospital and disaster medicine: the official journal of the National Association of EMS Physicians and the World Association for Emergency and Disaster Medicine in association with the Acute Care Foundation;24:s232.
14. Van Hoving D, Wallis L, Docrat F, De Vries S.
Haiti disaster tourism-a medical shame.
Prehospital and disaster medicine: the official journal of the National Association of EMS Physicians and the World Association for Emergency and Disaster Medicine in association with the Acute Care Foundation;25(3):201.
15. National Disaster Management Authority.
Pakistan [30th Sept 2010]; Available from: <http://ndma.gov.pk>.
16. Taylor C.
Pakistan floods and RICS DMC.
17. Nations U.
Pakistan Floods 2010.
2010; Available from: <http://www.un.org/apps/news/infocusRel.asp?infocusID=142&Body=Pakistan&Body1=flood>.
18. Mulvey J, Awan S, Qadri A, Maqsood M.
Profile of injuries arising from the 2005 Kashmir earthquake: the first 72 h.
*Injury*2008;39(5):554-60.
19. The Project for Excellence in Journalism.
2010; Available from: http://www.journalism.org/numbers_report/pakistan_among_international_disasters.
20. Agency UNR.
2010 [14th Sept 2010]; Available from: <http://www.unhcr.org/4c8609926.html>.