

Assessing countries' relative vulnerabilities and thus prioritising which need the most internal disaster preparedness and external assistance requires some standard comparisons of a range of factors, from gross national product and wealth inequalities to the state of health care, education, social welfare, human rights and more. Clearly some countries, although seemingly equally affected by emergency situations or disasters, are better able to cope with the event than others, or will find the losses from a disaster are a smaller proportion of their GNP.

Weak physical and organisational infrastructure, from poor roads to untrained civil servants, high population density and low health and nutrition status, all lower the capacity of a country and its people to recover from a disaster. Although the absolute number of disaster events is one indicator of a country's vulnerability, many factors play a role in determining that vulnerability.

For example, the geographical area covered and size of population also play a role in determining risk. Statistically, a large country has a greater chance of containing disaster-risk zones than a smaller country, though a high population density in a smaller country could mean more people being affected by each disaster.

Another way of assessing the comparative vulnerability of countries would be by comparing the number killed in disasters to the total population of the country. On this "demographic risk index", Ethiopia and Bangladesh rank highest, followed by Mozambique and Pakistan.

## Data problems

Comparisons of impact between different types of disasters and between different countries suffer from a major weakness in the statistics. While events and their physical characteristics can be an excellent record of natural phenomena, from levels of rainfall in a flood to the

scale of an earthquake, the data recording the human impact of disasters is, as yet, far less satisfactory.

Earthquakes, for example, can be some of the most devastating disasters. Because of their sudden and very powerful impact, more people die in proportion to those affected or injured than in most other types of natural disasters. But for a rational approach to making earthquakes and other disasters less deadly, the major factors of this mortality have to be identified.

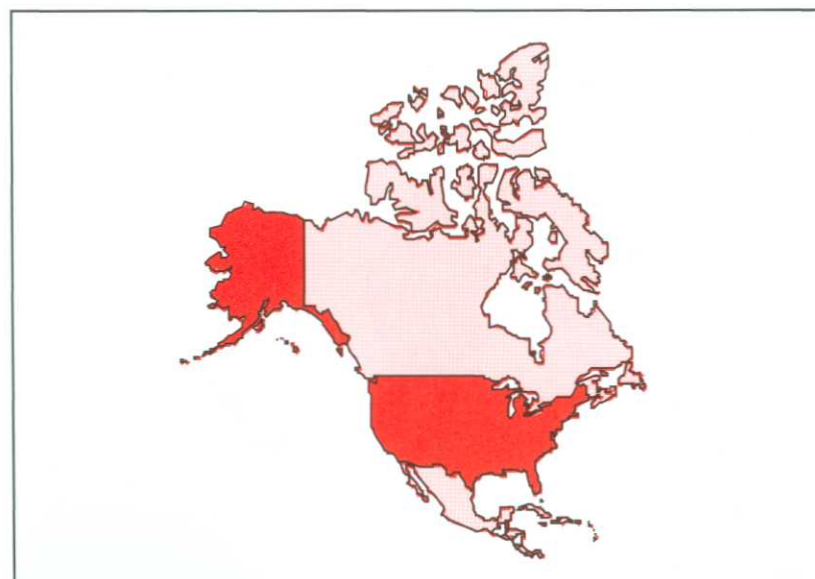
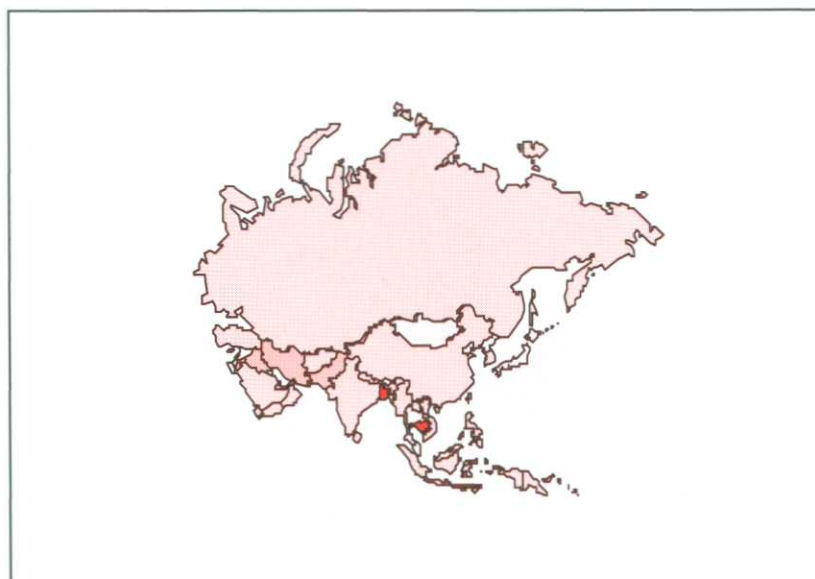
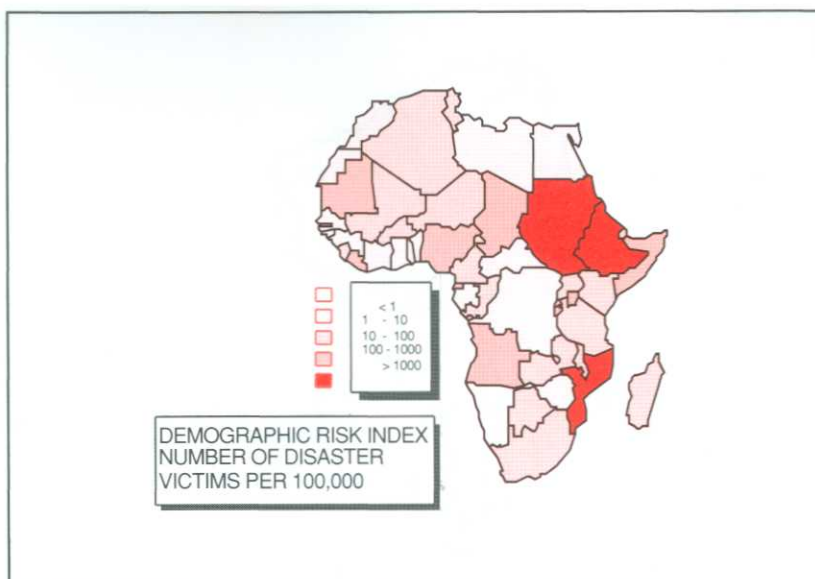
Satisfaction with ad hoc solutions has limited the effort to examine the preventable causes of human mortality. Many other factors beside seismic intensity play a critical role in determining death and injury levels in earthquakes.

## Safer housing

Community preparedness and anti-seismic architecture are particularly important. In a typical earthquake, there will be more casualties at night, in urban and peri-urban areas, in poor countries and, within them, poor communities, while prepared communities can reduce death and injury with appropriate and rapid responses to an earthquake or any other type of disaster.

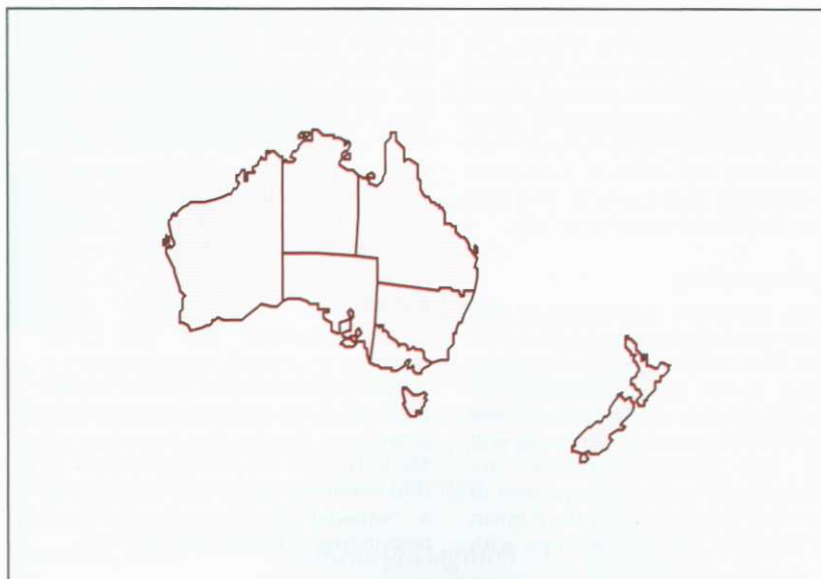
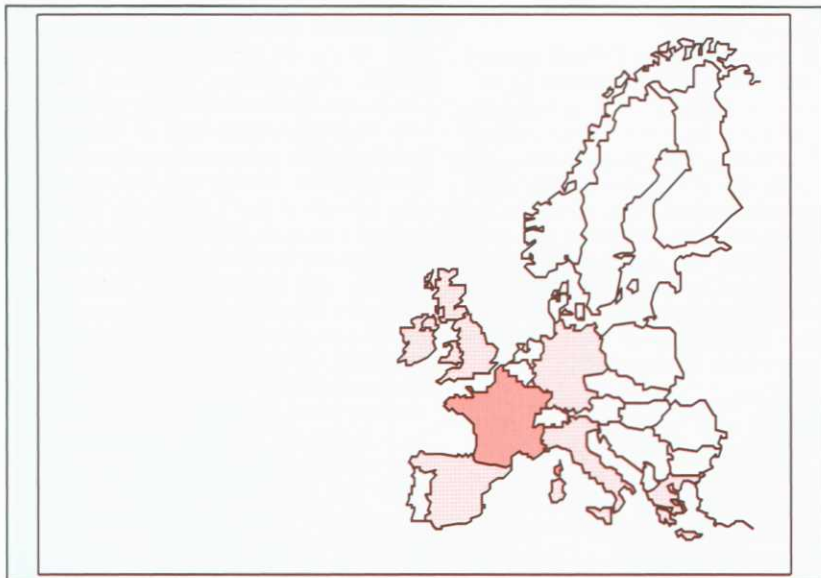
The type of housing has its effect: adobe or non-fixed housing present higher risk of deaths and injuries. If modern multi-storey buildings collapse, they are more likely to kill people, with fewer individuals injured, because those not crushed to death may survive in the "voids" or spaces created by the angles of two concrete blocks.

An earthquake is likely to kill far more people than a volcano. Two earthquakes in Iran on 20 June 1990 and 23 May 1991 killed 40,000 and 35,000 people respectively. During



*Figure 8: Demographic risk index. When disaster deaths are expressed as a proportion of country population, it is immediately apparent that people living in the least developed countries run the greatest risk of dying from disaster.*





the 1980s the Philippines, India and Afghanistan each suffered about 1,500 earthquake deaths; in 1985, Mexico experienced one earthquake that left nearly 10,000 dead. Several other earthquakes during the 1980s killed between 1,000 and 5,000.

But the death tolls from volcanoes can still be significant, especially if it's eruption sets off secondary effects. The eruption and mudslides from melting icecaps at Nevado del Ruiz in Colombia on 13 November 1985 killed 21,800 people; the Pijalika eruption in Chile on 21 May 1960 killed nearly 6,000. An eruption at Mount Agung in Bali on 3 January 1963 killed more than 1,500; and Mount Kelud's eruption in eastern Java on 25 April 1966 killed more than 1,000.

While the type of analysis presented here is useful, the figures should be used with caution. Human and economic data on disasters currently have major weaknesses, with data on damage subject to inflation or deflation according to the political and economic context. Should damage occur in an affluent area, the estimate of damage will be high because of land and asset values. The destruction of a whole slum community could be valued at less than one family estate, yet the human impact would be much larger.

Classification of people affected can be equally problematic, since it may be unclear, for example, whether figures for the dead or homeless are included under the label "affected". Included in Section Four, Part II, *Disaster Definitions*, is the full text of a set of agreed definitions for classifications, from "dead", "injured" and "homeless" to "famine", "heat-wave" and "landslide". This should help fill the information gap which is limiting research, policy making and practical action.

## Federation response

There are today 151 National Red Cross or Red Crescent Societies around the world and the number of National Societies is still growing

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## Focus 5: 1991, a year in the life of the Federation

The crisis of large-scale population movements continued in 1991, with conflict a factor in almost all refugee disasters as war came to Europe and continued in parts of Africa and Asia. For many refugees, displaced people and those refugees who return to their countries, the first symbol of comfort they encounter is that of the Red Cross or the Red Crescent.

Drought continues to combine with civil conflicts to ensure that food security remained high on the agenda in Africa. The variety and frequency of natural disasters to which the Federation was called upon to respond has increased dramatically, with Asia and the Pacific suffering the greatest number.

War and economic change brought eastern Europe into the relief picture, and the Federation faced new challenges with the complex mix of political, environmental and humanitarian factors in many of the former Soviet republics.

### Food security

The largest share of the money sought for relief in 1991 was to supply food to hungry or starving inhabitants in Ethiopia, Sudan and Iraq. These operations, which continued in 1992, helped about 15 million people. Implementation remains difficult.

The Sudanese Red Crescent continued to be the major voluntary relief agency in Sudan with two large-scale relief operations in the Red Sea Hills and southern Kordofan. The infrastructure of the Iraqi Red Crescent required major strengthening before it could take on a leading role throughout the country in relief distributions; Red Crescent branches have now been formed in all 18 governorates.

### Refugees

In 1991, the Federation responded to the needs of refugees, returnees and displaced people whose lives had been traumatised by war in more than 20 countries worldwide.

The depressing picture changed little from the 1980s except to get worse. Millions of refugees continued to depend on assistance supplied through Federation appeals and delivered by National Red Cross or Red Crescent Societies in Malawi, in Liberia's neighbours or Guinea, Sierra Leone, Côte d'Ivoire and Ghana, and in Pakistan. The cost of the war in the Gulf was borne by many inside and outside Iraq. In Sri Lanka, many dis-

placed, despite assistance from the National Red Cross Society, supported by the Federation, spent a third rainy season in makeshift shelters.

War in former Yugoslavia has revived memories of the last world war on mainland Europe. In conflict areas, the International Committee of the Red Cross has a major operation in place while outside the war zone the Federation assists refugees and the local population.

History repeated itself in Bangladesh with another mass exodus of Rohingya Muslims from Myanmar.

Regrettably, appeals for funds to face the challenge of population movements, including provisions to prepare for repatriation, do not engage donors' attention as much as those arising immediately from war situations.

It continued to be difficult to meet the full costs of programmes in Afghanistan and Pakistan which are geared towards immediate assistance and ensuring full preparedness by the National Red Crescent Societies involved in the return home of the refugee population. The same was true in Cambodia, where donors exercised great caution in responding to an appeal which aimed to lay the groundwork for the return of 350,000 refugees from Thailand.

### Floods

The latter half of 1991 in southern Asia was marked by heavy monsoon flooding. The floods were devastating, particularly in China where millions were affected. Cambodia, Myanmar and Viet Nam also suffered. Bangladesh was able to cope with considerable flooding without an appeal by using resources already available. Early in 1992, flooding in several South American countries was attributed to the adverse effects of the climatic phenomenon El Niño. Later in the year, devastating floods hit Pakistan and India. In both cases the National Red Crescent and Red Cross Societies responded rapidly.

### Earthquakes

The Federation responded in 1991 to four earthquakes: in Afghanistan, Costa Rica and Panama, Peru and the former Soviet Union. Nothing occurred to match the tragedies of the previous two years in Armenia and Iran. The National Societies responded well to the consequences of these four seismic events; the Afghan Red Crescent also had to cope with

severe flooding in the affected region. The Turkish Red Crescent responded quickly early in 1992 when an earthquake claimed hundreds of lives and left many thousands homeless in and around the city of Erzincan.

### Cyclone/typhoon

The sympathy for the people of Bangladesh as a result of the cyclone which hit the country in April 1991, killing 138,000 people, was matched by a generous response from donors. In the Philippines two typhoons struck with deadly force, and the final appeal of 1991 was for a typhoon which struck Western Samoa leaving 100,000 people homeless.

### Epidemics

Cholera deaths numbered 16,761 by the end of 1991 in the Americas and Africa, according to the World Health Organisation. National Societies whose countries were affected told the Federation that a strategy based on both prevention and control was required. Hence, a global appeal was launched for 12 million Swiss francs to provide technical assistance, publications for 25 National Societies, training, and supply of oral rehydration salts. Insufficient funds were received to meet all the needs or to hire a health coordinator to steer the National Society campaign against cholera. The Federation views cholera as a long-term problem requiring a long-term strategic response tied in with the Movement's Child Alive programmes and other initiatives to combat diarrhoeal disease.

### Volcanic eruption

Mount Pinatubo in the Philippines erupted on 9 June 1991. Six days later the area was hit by a typhoon as further eruptions issued from the volcano, causing thousands more to flee. The Philippine National Red Cross was operating in 276 evacuation centres sheltering 130,944 people. Human casualties were relatively low but the livelihoods of almost half a million people were affected.

### Fires

In Myanmar, the Red Cross response to a small appeal ensures a continuing channel for disaster assistance. The well-ordered response to a disastrous fire in the township of Meiktila, and the relief operation in flood-affected areas, was evidence of a National Society well capable of responding to humanitarian needs.



*A year in the life of the Federation: National Red Cross or Red Crescent Societies exist in almost every country around the world. The Federation channels assistance through them to disaster-affected people. Somalia, 1992. James Nachtwey/Magnum.*

steadily. A full list of existing National Societies and those "in formation" is included in Section 4, Part III, *Who's Who in Disasters*. Together the National Societies form the International Federation of Red Cross and Red Crescent Societies, known as the Federation, with its coordinating secretariat based in Geneva. It is through the secretariat that the Federation is able to focus its disaster preparedness and response to help those most in need.

The Federation system offers four key strengths which distinguish it from many non-governmental organisations in the same field: a global presence through its member National Societies; the size and quality of its volunteer base; the "single request" appeal facility; and its unrivalled experience and expertise.

The National Red Cross or Red Crescent Societies enable the Federation to monitor humanitarian issues and events in almost every country in the world. This is a unique service to the victims of disasters, their governments, donors and other NGOs. It also accounts for the fact that frequently the Red Cross or Red Crescent will be the lead non-governmental agency following a disaster, providing pivotal partnership in the relief of suffering.

## **Regional delegations**

Additional support is provided for National Societies through eight regional delegations across the world (Budapest, Moscow, Abidjan, Nairobi, Harare, San Jose, Kuala Lumpur, Sydney) and individual specialist delegates (278 in December 1992) seconded into National Societies to assist their work and planning. Delegates are not used only in times of disaster, but perform a vital role of cross-fertilisation, transferring their knowledge of institution building, disaster preparedness and disaster response from National Societies with more experience to those with less.

The Federation unites its members through a single response system.

One telex or fax, channelled through Geneva, can mobilise the resources of 150 sister National Societies worldwide. This represents a powerful capability for countries which regularly face disaster, and enables the Federation to ensure that its response activities are well coordinated and targeted.

This worldwide structure cutting across all political and religious divides, present in almost every country in the world and with almost 75 years of experience in disaster response, gives the Federation a unique position and voice when it comes to discussing disaster and speaking out on behalf of those who suffer in disasters. ■