

Learn the lessons



Governments must change the way they do aid work after thousands of needless deaths in recent disasters

“We spend billions protecting our own countries from disaster, but little of our aid money helps poor countries do the same”

Sarah La Trobe, Tearfund policy officer, Environment and disasters

Tearfund, a member of the Disasters and Emergency Committee (DEC) is one of the UK's leading relief and development agencies, working in partnership with Christian agencies and churches around the world to tackle the causes and effects of poverty. Tearfund works with partners in over 60 countries in Africa, Asia, Latin America, Central America, the UK and Ireland. Around the globe, many of Tearfund's partners work alongside poor communities in implementing measures to reduce the risk and impact of disasters.

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Executive summary

Thousands more lives could be saved

The Indian Ocean tsunami is an international tragedy, but it is also a warning to the international community that it must in future do aid work differently.

Rich countries spend millions of pounds protecting their people from the risk of floods, earthquakes and droughts. But we spend very little of our international aid budgets helping poor communities to do the same. We are wrongly wedded to aid spending, which 'bandages wounds' rather than 'prevents injuries': This must now stop. We must re-think and learn the lessons of the tsunami and other recent disasters.

Disasters are increasing dramatically, especially in developing countries. They are affecting more and more people each year – the majority of whom are least able to cope with them.

98% of those killed and affected by natural disasters come from developing countries, underlining the link between poverty and vulnerability to disaster

Tearfund believes that thousands of lives will be saved each year in developing countries and millions of pounds made to go further, if more emphasis is placed by governments, local authorities and relief and development agencies on helping vulnerable communities reduce disaster risks and to prepare people to save their own lives when disaster strikes. If this does not happen, lives will be unnecessarily lost and millions of people will never escape the poverty trap, as with each new flood, drought or cyclone, precious gains made in poverty eradication are swept away.

Tearfund believes donor governments must spend 10% of their humanitarian aid budgets on reducing the risks of disaster faced by millions of people in developing countries. They should also ensure that their overseas development programmes account for disaster risks

Preventing disaster is cheaper

The tsunami showed disasters affect rich and poor alike – but the poorest people usually suffer the most. This is due to a number of reasons including a lack of financial and material resources to protect their livelihoods and homes against disaster. Each disaster that affects a poor, vulnerable community widens the gap between the rich and the poor. Years of development work and financial investment can be wiped out – leaving communities even poorer and more vulnerable to disasters.

Tearfund's experience in India and elsewhere shows that a well-prepared and resourced community can stop hazards such as annual floods from becoming annual disasters. Simple measures that help a community to reduce disaster risks can save lives and property, as well as costing much less than rescuing people after disaster has struck. Tearfund partners working in Andhra Pradesh find that for every one Rupee spent on prevention, 13 Rupees is saved.

Why Governments are slow to act

3 months before the Mozambique floods of 2000, its government appealed to the international community for \$2.7 million to prepare for the impending crisis. It received less than half this amount. After the floods hit, more than \$100 million of emergency aid was sent in by the international community. At a subsequent conference, a further \$450 million was pledged for rehabilitation costs.

So why are governments not investing enough in reducing the risks of disaster in developing countries?

Tearfund research has found that, whilst many donor governments acknowledge that reducing disaster risk in vulnerable countries is a good thing, not nearly enough is done to put it into practice.

This is due to:

- A lack of political will
- Conflicting development demands on governments such as HIV & AIDS, conflict, debt relief and trade reform
- A lack of understanding by many in the development sector of the concept and practice of reducing disaster risks and how it relates to their work
- Measures to reduce disaster risk fall between the different disciplines of relief and development work. Relief experts see it as a development role and vice versa

There was a time when we did not know where disasters would strike. But today we know which countries are most disaster-prone, and which communities are most vulnerable. It is inexcusable for the international community to mainly respond to disasters in a reactive way, when science and technology now enable us to predict risk and help vulnerable people prepare for disasters.

It might not always be possible to prevent a disaster, but it is always possible to be prepared for one. It is both indefensible and illogical not to help communities reduce disaster risk when very often, thousands of lives could be saved by even the simplest – and cheapest – of measures.



*Lives could have been saved in the South Asia Tsunami, if vulnerable communities had been equipped to cope with disasters
Photo: Tearfund/Geoff Crawford*

Recommendations

- Donor governments should allocate at least 10% of their humanitarian assistance budgets to reducing disaster risks.
- Governments should recognise the threat that disasters pose to attainment of the Millennium Development Goals, as well as the moral and economic benefits of investing in reducing disaster risks.
- Governments should be held accountable for the agreements they made at the World Conference on Disaster Reduction (January 2005), and make speedy and measurable progress with implementing them.
- Donor institutions, governments and NGOs should ensure that every development and poverty reduction policy decision and programme proposal in a disaster-prone area takes account of potential disaster risks and seeks to minimise them.
- Measures to reduce future disaster risks should be incorporated into all relief, reconstruction and rehabilitation programmes.
- Poor communities should be central to decision-making. Local authorities, aid agencies and NGOs should work alongside poor communities in identifying and reducing risks. Technological early warning systems must be linked to the local-level in order to be effective - training and education of vulnerable communities is required in order to achieve this.
- There should be much greater international recognition of the links between climate change and disasters. The disaster management and climate change communities should coordinate to make greater progress with both issues and avoid duplication of activities.
- The G8 nations should elaborate how, where and when they will 'help vulnerable communities adapt to climate change' as agreed at the G8 Summit in Edinburgh in 2005. Reducing the risk of disasters must be a key component of this assistance.

Introduction

Waiting for disaster...

An earthquake in an empty desert is not a disaster. But add people living in flimsy shacks and there is potential for catastrophe. Natural hazards like cyclones, and droughts only become disasters when they hit vulnerable communities. In many poor countries around the world millions of people are literally waiting for disaster to happen.

With global temperatures and sea-levels rising as a result of human-induced climate change, people living in the world's poorest and most vulnerable areas are increasingly at risk of floods, droughts and cyclones – and consequently of losing their lives, livelihoods and loved ones.

The UK and other developed nations spend millions of pounds on their own natural disaster defence programmes. Rich countries have the resources to invest in early warning systems and other measures such as flood barriers, which help to reduce loss of life, property and infrastructure.

But when it comes to the developing world, little money and effort is spent on such preventative actions. Rather money and effort are often spent only **after** disaster has struck, as seen time and time again on our TV screens as emergency teams pour in to rescue and bring medical aid and relief to victims of flood, famine, disease and cyclone. Many need not be in such danger if suitable measures to reduce the risks were undertaken in advance.

Prevention is better than cure

With advances in science it is now possible to predict which communities are most vulnerable to disasters, and enable those communities to protect themselves. Tearfund and its partner agencies and churches around the world believe that ensuring local communities are equipped to reduce the risk of disasters is critical to tackling suffering and poverty in the 21st Century.

Reducing disaster risk means working with local people and experts to identify known or likely risks (such as floods, landslides etc) and putting in place measures to:

- **Minimise the impact of these when they strike** – for example, through strengthening buildings and creating policies that forbid building on flood plains.
- **Prepare for disasters** - for example by building flood shelters, creating stores of non-perishable food and emergency supplies in safe places and setting up early warning and evacuation systems. Such preparation is vital because most lives are saved in the first 48 hours of a natural disaster. Very often the first emergency relief aid from the international community does not arrive until a few days after the disaster. The local people are always the ones that must respond quickly to a disaster.

This report examines the impact of more frequent disasters on poor people around the world. It sets out the solution - governments must urgently invest more in reducing the risks of disasters. The case for this is compelling - it makes sense from every angle: moral, social, political and financial.

The problem:

- The number and scale of disasters is increasing, and economic costs associated with them are escalating.
- Global climate change will further increase the frequency and severity of extreme events in the 21st century.
- Poor people are the most vulnerable to disasters. Poverty reduction efforts are being wasted as disasters wipe out years of development gains.

- Rich countries are increasingly being affected by disasters, as climate change kicks-in and the impact of disasters in developing countries is felt beyond their borders.

The solution:

- Equipping vulnerable communities to reduce disaster risks can not only reduce the impact of disasters, but in some cases, it can even prevent them from happening in the first place - saving lives and livelihoods, and protecting development gains and financial investment.
- Measures to reduce the risks of disasters are often simple and can be highly cost-effective, as two Tearfund projects in India demonstrate (see section 4).
- The science, tools and methods needed to predict disasters and reduce their impact are readily available.

Governments must urgently adopt new thinking about aid budgets and programmes. As this report shows, it is illogical and morally indefensible not to invest more finance and effort in reducing disaster risks in vulnerable regions.



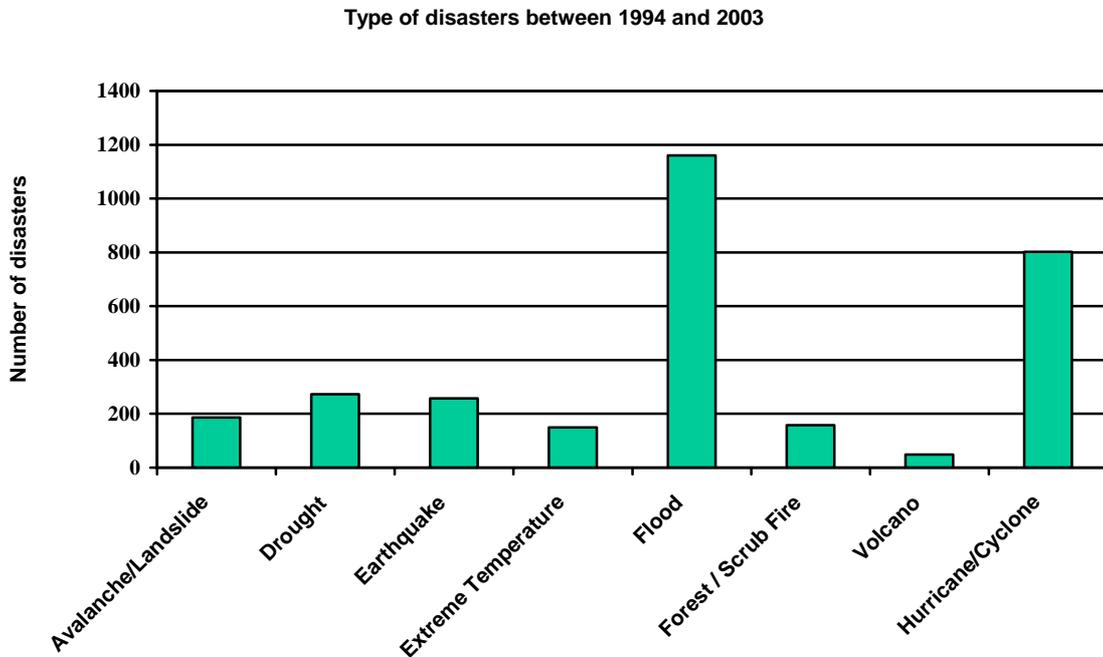
A Tearfund project in North Bihar, India is helping local communities cope with annual floods. The raised escape road through a mango tree plantation aids evacuation of low caste villagers to safer areas.

Photo: Tearfund/Caroline Irby

Chapter 1

Disaster after disaster

Disasters are an increasingly serious global problem



Source: Statistics provided by Em-Dat, CRED for the International Federation of Red Cross and Red Crescent Societies World Disasters Report 2004

- Much of Kachchh district in Gujarat state, west India was devastated by an earthquake in 2001 which killed nearly 20,000 people and made more than a million homeless
- In late 2003 an earthquake devastated the Iranian city of Bam, claiming at least 26,000 lives¹
- In 2002 drought affected 300 million people in India²
- 150 million people in China were affected by one flood alone in July 2003³
- Nearly two million houses were destroyed in the 1999 Orissa cyclone, which is widely described as one of the worst cyclones India witnessed in the last century
- In 1998, flooding in Bangladesh destroyed thousands of homes, nearly half the people affected lost their household possessions and over 75% lost or had suspended their ability to earn an income⁴

¹ International Federation of Red Cross and Red Crescent Societies, World Disasters Report 2004

² Ibid

³ Ibid

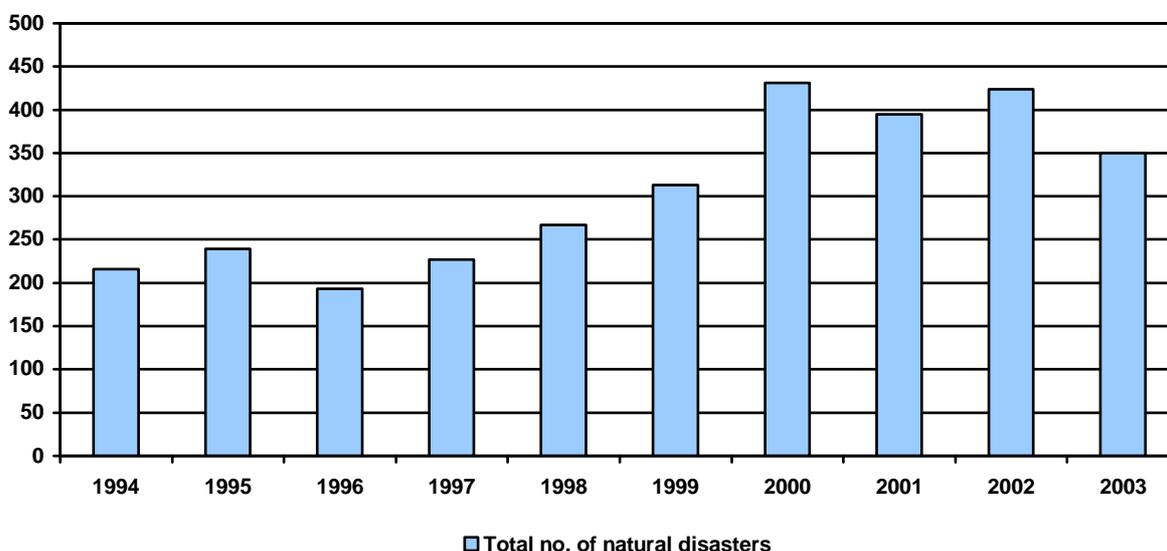
⁴ World Development Report 2000/2001

Disasters are increasing

The South Asian tsunami (December 2004), hurricane Katrina in the US (August 2005) and the Pakistan earthquake (October 2005) are just three of the latest in a huge catalogue of disasters – over the past few decades, the world has witnessed a dramatic rise in the number of natural disasters.

In the 1970s there were 1,110 disasters – but by the end of the 1990s this had more than doubled, standing at 2,742.¹

From 1994 to 1998, reported natural disasters averaged 228 per year - from 1999 to 2003, this figure rose to an average 382 disasters each year²



Source: Statistics provided by Em-Dat, CRED for the International Federation of Red Cross and Red Crescent Societies World Disasters Report 2004

The biggest increase in the number of disasters is seen in developing countries, with an increase of 142 per cent between 1999 and 2003. Africa was the continent worst affected. By comparison, disasters in developed countries increased by 30 per cent.³

Disasters are not merely uncontrollable 'acts of God' – they are caused by the combination of a potentially damaging event such as a cyclone, drought and flood and a high level of human vulnerability. Disasters are increasing because of a changing global climate, combined with an increase in population in poorer regions of the world, and rapid, unplanned urbanisation causing more people to live in dangerous areas. Environmental destruction is also increasing the impact of droughts and floods.

¹ Munich Re

² International Federation of Red Cross and Red Crescent Societies, World Disasters Report 2004

³ Ibid

Number of people affected by disasters is increasing

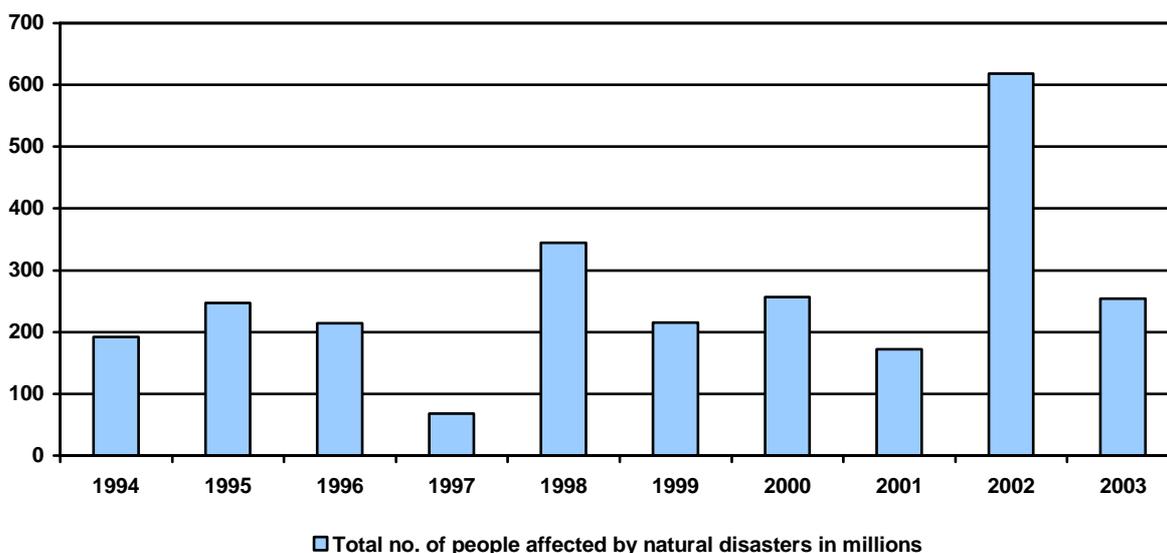
The number of people affected by natural disasters has risen dramatically. Three times more people were affected by disasters in the 1990s than in the 1970s¹

In 2002 alone, over 618 million people, over ten times the population of the UK were affected by disasters²

Natural disasters kill approximately 66,000 people each year. But every year, on average, 211 million are affected by them and in addition to their grief, survivors of these catastrophes have to cope with homelessness, losing their income and the destruction of local infrastructure.

They also have to deal with the likelihood that having lived through one disaster, their communities are more exposed to others, such as disease and famine.

Disasters affect people in diverse ways - for example in the South Asian tsunami over 525,000 people were injured, 1.6 million displaced and over 1 million people made homeless³. Whole communities were stripped of their livelihoods for years to come. Fishermen lost fishing boats and nets and many are still afraid to venture out to sea. Those working in the tourist industry saw their jobs vanish with the deadly wave. Schools and hospitals have also been destroyed and may take years to rebuild.



Source: Statistics provided by Em-Dat, CRED for the International Federation of Red Cross and Red Crescent Societies
World Disasters Report 2004

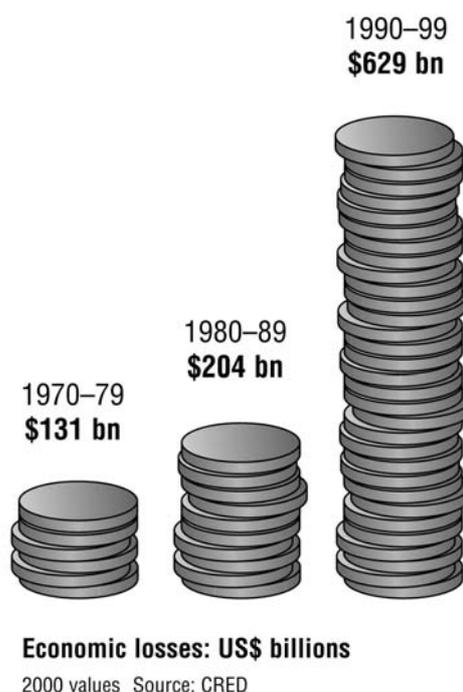
¹ International Federation of Red Cross and Red Crescent Societies, World Disasters Report 2002

² Ibid

³ International Federation of Red Cross and Red Crescent Societies, website:
www.ifrc.org/what/disasters/response/tsunamis/index.asp

Economic losses from disasters are increasing

Economic losses resulting from disasters have risen dramatically - from an estimated \$3.9 billion a year in the 1950s to \$63 billion a year in the 1990s.¹ This represents a five-fold increase in the last three decades.



Hurricane Katrina, which battered the south coast of America in August 2005 is estimated to have cost the US at least \$125 billion dollars

Between 1980 and 2003, the World Bank financed 147 post-catastrophe reconstruction projects worth about US\$12.5 billion²

From 1990 to 2000, natural disasters resulted in damages constituting between 2 to 15 per cent of an exposed country's annual GDP³

Hurricane Mitch was one of the worst natural disasters to hit Central America when it struck in 1998. Around 10,000 died and 3 million people were left dependent on aid. The cost of the damage in Honduras was put at \$3.6 billion by the United Nations Development Programme – around 60% of the Honduras annual GDP. The UK Government's Department for International Development (DFID) reported that 60% of bridges, a quarter of schools and half of agricultural production was destroyed. Decades of development work was destroyed overnight. The Honduran president, Carlos Flores declared, *"We lost in 72 hours what we have taken more than 50 years to build."*

These figures are dramatic, yet they are based only on the direct, visible, easily calculable impact of a disaster, such as damage to homes, hospitals, schools, factories, infrastructure and crops. They do not take into account less quantifiable effects such as the loss of personal belongings or jobs, widening trade or government budget deficits, or increasing scale and depth of poverty. Therefore, economic losses are considerably under-estimated and the 'true cost' of disasters is much higher.

¹ 'Natural Disasters: Counting the Cost', World Bank website

² Ibid

³ Ibid

Chapter 2

The world at risk

Disasters affect the rich

Rich countries have a greater ability to prepare for and reduce the effects of disasters than poorer countries, and as a result they may have maintained a false sense of security. However, with global temperatures rising and extreme events increasing across the globe, this sense of security is being eroded:

- An increase of five degrees in the usual summer temperatures in 2003 triggered a disaster that shamed modern, wealthy countries across Europe. Around 35,000 elderly and vulnerable people died.¹
- In August 2004, the UK faced a potentially fatal disaster when Boscastle in Cornwall was flooded on a busy summer's day.
- The 2004 South Asian tsunami plunged wealthy westerners into disaster as well as poor people who are natural disasters' usual victims

Moreover, in this globalised world, countries can be affected by disasters that take place beyond their borders. Economic costs associated with disasters often affect more than the country directly in the disaster zone: reduced levels of production or infrastructure can limit access to raw materials, energy, labour or markets. There can also be loss of productivity arising from, for example, increases in disease. As a result, rich countries' trade with affected countries can be damaged.

In addition, rich countries are having to spend more on responding to disasters in poorer countries, and environmental refugees are increasing. Such economic and social impacts bring disasters much closer to home for rich countries.

In short, developed countries should not feel safe from disasters. It is in all our interests to reduce the risk of disasters wherever in the world they threaten to strike.

Disasters devastate the poor

Nine out of ten people killed and affected by natural disasters come from developing countries, underlining the link between poverty and vulnerability to disaster²

By 2025 over half of all people living in developing countries will be highly vulnerable to floods and storms³

While disasters affect the rich, and will increasingly do so with global climate change, the poorest countries and communities will remain far more vulnerable. Disasters almost always hit the poorest hardest:

- 24 out of the 49 least developed countries face a high risk of disaster – at least six of them have suffered between two and eight major disasters per year in the last 15 years⁴

¹ International Federation of Red Cross and Red Crescent Societies, World Disasters Report 2004

² International Federation of Red Cross and Red Crescent Societies, World Disasters Report 2001

³ International Federation of Red Cross and Red Crescent Societies, World Disasters Report 2000

⁴ Disaster Profile of Least Developed Countries, United Nations Development Programme, 2001

- Currently, 85 per cent of the people exposed to earthquakes, tropical cyclones, floods and droughts live in countries of medium or low human development¹.
- In highly developed nations 44 people die per reported disaster, while each disaster in countries of low human development claims an average of 300 people².
- According to officials at the World Bank, the Mozambique flood of 2000 resulted in a 45% drop in GDP, whereas in Germany, the 2002 floods are estimated to have caused less than a 1% drop in GDP³.

Poor people are usually the hardest hit by disasters because they lack the necessary financial and material resources to protect their livelihoods and their homes. They are also more likely to live in dangerous locations such as flood plains, steep slopes and riverbanks.

Images from New Orleans show that many of those who suffered most from Hurricane Katrina were poor. Whilst many of the richer inhabitants were able to flee, many of the poorer families did not have the means to heed evacuation warnings. A recent US census found that one in five of the city's residents had no access to a car.

Disasters widen the gap between rich and poor

As illustrated when Hurricane Mitch struck Honduras in 1998, disasters often wipe out years of development work, leaving poor communities even poorer and more vulnerable to future disasters.

Developing country governments often do not have enough resources for reconstruction after a disaster, let alone for long-term investment in reducing poor people's vulnerability. Therefore, disasters often widen the gap between rich and poor, as poor people, caught in a vicious cycle of repeated disasters and emergency aid, are unable to improve their standard of living.

“Poverty plays a big role in keeping people vulnerable to disasters. And in the same fashion, disasters keep the poor in poverty by consistently wiping out the few resources they have.”
World Bank 2000

¹ UNDP Reducing Disaster Risk Report 2004

² International Federation of Red Cross and Red Crescent Societies, World Disasters Report 2004

³ World Water Council in 2003

Chapter 3

Why are the poor most at risk?

There are a number of factors that increase poor people's vulnerability to disasters. These include climate change, urbanisation, badly designed buildings, inappropriate land use, environmental destruction and political, social and geographical marginalisation.

Climate Change

The world's climate is changing as a result of rising greenhouse gas emissions. The profile of human-induced climate change has significantly increased in recent years as scientists frequently publish new and startling evidence. Latest predictions of climate change from the Hadley Centre reveal that man-made climate change has already doubled the risk of intense heat waves, such as was experienced by Europe in the summer of 2003. Indeed, it is predicted that by the 2060s, such summer temperatures will be considered unusually cool.

Increases in global temperature are leading to sea-level rise and more severe weather events. The Inter-governmental Panel on Climate Change (IPCC) predicts that global temperature and sea-levels will rise even further during the 21st century, increasing the frequency and severity of floods and droughts and the intensity of cyclones.

The IPCC predicts:

- Increased summer drying over most mid-latitude continental interiors, with increased risk of drought
- An increase in tropical cyclone peak wind intensities
- An increased risk of floods and droughts, associated with "El Niño", in many different regions.

Very often it is poor people who live in areas where the risk of extreme weather conditions is the greatest. Moreover, poor people are less able to adapt to climate change than the wealthy, and will therefore be the most harmed by it. The IPCC predicts: 'The effects of climate change are expected to be greatest in developing countries in terms of loss of life and relative effects on investment and the economy'.

Dried Up, Drowned Out

Tearfund's report *Dried Up, Drowned Out*¹, reveals that poor communities around the world are already experiencing climatic change. Tearfund's partner organisations in Africa report that rainfall is decreasing and they are experiencing increasingly long and frequent periods of drought, as well as more flash floods. In Asia, partners report that the timing of the rains is changing, and both floods and droughts are becoming more and more unpredictable. In Latin America, they report that temperatures are rising, dry spells are getting longer, and floods, droughts and storms are all becoming more prevalent.

In Rwanda, Tearfund partner organisation MOUCECORE tells us,
"The longest drought period used to be up to four months and now it can be six to seven months."

Koinonia in Bangladesh observes,
"There have been remarkable changes in the weather locally as well as nationally...advance of the monsoon and heavy rainfall for long periods; drought; cyclone; tornado; and increasing temperature and sea-level..."

These changes are having a devastating effect on poor communities. Tearfund's partner organisations are reporting that drinking water is becoming less available, crop yields are declining, and disease, malnutrition and migration are increasing.

¹ www.tearfund.org/webdocs/Website/Campaigning/Policy%20and%20research/Driedupdrownedout.pdf

In Mali, Tearfund partner TNT informs us:

“Drought is becoming more and more frequent...the life of an entire population is on hold, waiting for clouds which promise less and less rain and which finally destroy the hope that cattle breeders and their herds will enjoy healthy pastures.”

And in Mexico, AMEXTRA observes:

“The climate changes have especially affected the agriculture of the poor because they most depend on the seasons. This great instability in the seasons, and therefore instable production, is causing increased migration to the USA, reaching over 4000 immigrants last year, the majority being from the indigenous population, the poorest of the poor in Mexico.”

While there are uncertainties as to the causes of local climate change (undoubtedly local environmental management is a key factor), the climatic changes reported by our partners are consistent with scientific predictions for human induced global climate change. What we know for sure is that global climate change is already happening and is going to make matters worse for poor communities. We also know that, as the above quotes show, poor people are extremely vulnerable to climate change.

“Unless the necessary steps are taken, climate change will provoke enormous disasters in the world. Every impact we have mentioned will become more acute in the future”. (OCDIH in Honduras, an organisation Tearfund worked with in the aftermath of Hurricane Mitch)



*Irregularity in the timing of the rains is affecting crops
in many parts of world
Photo: Tearfund/Jim Loring*

Unplanned urbanisation

In the past 40 years, while the overall world population has doubled, its urban population has increased fivefold. In the largest cities of the developing world, up to half the people (around 1 billion) now live in unplanned squatter settlements. Many squatter settlements lack even the most basic infrastructure -health and fire services, dykes and drains, telecommunications, piped water and sanitation - and are therefore ill equipped to cope when disaster strikes.

When Hurricane Mitch devastated Central America in October 1998, 10,000 people died and a million were left homeless in Honduras, the second poorest country in the Western hemisphere. Rapid urbanisation and population pressure were among the key causes of vulnerability, helping to turn Mitch from a natural hazard into a human disaster.

Bad building and inappropriate land use

“At no time in human history have so many people lived in cities clustered around seismically active areas. Destitution and demographic pressure have led more people than ever before to live on flood plains or in areas prone to landslides. Poor land-use planning;

environmental mismanagement; and a lack of regulatory mechanisms both increase the risk and exacerbate the effects of disasters" UN Secretary General, Kofi Annan¹

Poor people often live in homes that offer little protection from floods, storms and earthquakes. In some countries, even critical buildings such as hospitals are not protected from disaster, as was so tragically demonstrated in the Iranian earthquake that killed at least 30,000 in Bam in 2004 and in Pakistan in 2005.

The poor may also have no choice but to live on marginal and flood-prone land. As a result, hundreds of thousands of people are forced to migrate each year to safer ground or to temporary camps - for example, along the river flood plains of India and South East Asia. On the Bangladeshi island of Hatiya in the Bay of Bengal, many homes and farms are lost each year to erosion, but their owners are too poor to buy land elsewhere.



Nur Mohammed is one of the island's 400,000 inhabitants. He lives in a shack at the north end of the island. Where his house used to be is now submerged underwater, half a mile from the shore. "I'm aware of the risk," he says, "but there's nothing much I can do, because I don't have the money to buy land or to go somewhere else."

Photo: Tearfund/Jim Loring

Environmental destruction

Poor people often have little choice but to resort to bad environmental practices to survive, such as slash-and-burn agriculture and deforestation, which increase the risk of flooding and landslides. Poor communities are also vulnerable to environmental destruction caused by others. It is estimated that an area of rainforest the size of England is destroyed each year, partly by commercial logging and cattle ranching for foreign markets.

When tropical storm Jeanne hit the tiny Caribbean country of Haiti in September 2004, 2,500 people were killed and thousands more displaced. Yet neighbouring Dominican Republic, with its higher living standards, fared much better. As did nearby Cuba, which weathered the most powerful hurricane in living memory just days earlier without a single casualty.

Environmental destruction and lack of economic development were major factors that increased the impact of the hurricane on Haiti. As one of the poorest, most densely populated and most deforested countries on earth, a mix of interlinked factors made it particularly vulnerable. Deforestation was a major factor.

Poverty causes people to take what they can from the land - in Haiti's case wood, either burnt locally or converted into charcoal for use in the cities. Because there are so many people – around eight million – deforestation is widespread.² Without tree roots to bind soil together, soil is washed

¹ Kofi Annan, UN Secretary-General, Foreword to 'Living with Risk: A Global review of disaster reduction initiatives', ISDR

² A United Nations report ten years ago said that forest cover was 'impaired' in 97% of the country. Source: BBC website

away by heavy rain. After a flood there is even less land to use - resulting in yet more poverty. Normal rainfall slowly removes soil underneath houses, meaning that a flash flood will tear them away in seconds.

Environmental destruction also played a significant role in the Indian Ocean tsunami disaster. The disaster highlighted the importance of natural coastal features in protecting communities from hazards. Coastal features such as mangrove forests, coral reefs and sand-dunes are good natural buffers against events like tsunamis. However, it is reported that many of the coastal features in areas affected by the tsunami had been destroyed or severely damaged adding to the loss of life in these areas.¹



*Deforestation is a key issue resulting in local level climate change in Latin America
Photo: Tearfund/Geoff Crawford*

Political, social and geographical marginalisation

Poor communities often face political, social and geographical marginalisation, which increases their vulnerability to disasters. In Honduras for example, wealthy powerful elites and illegal loggers are clearing vast tracts of land for their own use, thereby increasing the risk of drought, flooding and landslides for local poor communities. The rural poor also frequently do not have rights to reasonable quality land, and so are forced to live in vulnerable areas.

And they are often denied a voice in politics and the media, meaning it is difficult for them to defend their rights especially when their interests conflict with the interests of the politically and socially powerful.

“In Honduras 70% of the land is mountain. Over 20 years an elite took over the best land and left everyone else without land and forced them to move to the city to look for work, or to live on the river banks. The gap between rich and poor is very dangerous” says Alexis Pacheco, Tearfund Regional Adviser.

It is also clear that, as outlined above, environmental destruction increased the impact of the tsunami, despite the fact that many affected countries had laws to increase natural coastal buffer zones. India, for example, had a law that established a 500-metre buffer zone but this was generally violated for commercial purposes. In the post-tsunami rebuilding it is feared that attempts to regulate coastal development are doomed to failure because of the inability of the authorities to enforce regulations, particularly in poor remote areas.²

The Asian tsunami has also shown the world that many remote coastal communities are often cut off from international and national emergency efforts.

These are just some of the factors that are increasing poor communities' vulnerability to disaster. Other factors of increasing concern include poor governance, HIV/Aids, conflict etc.

¹ Coastal Hazard Mitigation - Lessons from the Asian Tsunami, Les Batty, 2005

² Ibid

Chapter 4

Saving Lives and Livelihoods

There is strong evidence to show that equipping vulnerable communities to anticipate and reduce risks, can reduce the impact of disasters or even prevent them from happening. If disaster does strike, a well-prepared community is better equipped to cope and recover from it, hence saving lives and increasing cost-effectiveness from every aid dollar.

The US Geological Survey has calculated that economic losses worldwide from natural disasters in the 1990s could have been reduced by \$280bn by investing just one seventh of that sum in disaster risk reduction¹.

Examples of how existing disaster risk reduction measures are saving lives and money include:

- Cyclone shelters, early warning systems and other measures in the Bay of Bengal are protecting communities from major cyclones
- The planting and protection of 12,000 hectares of mangroves by the Red Cross in Vietnam has cost around US\$ 1.1 million, but has helped reduce the cost of sea dyke maintenance by US\$ 7.3 million per year²
- In La Masica, Honduras, early warning flood systems and training for the local community ensured that not a single life was lost in La Masica when Hurricane Mitch struck in 1998
- When Hurricane Michelle hit Cuba in 2001, effective disaster planning ensured that 700,000 people were evacuated to safety³

The ability of local people to resist the impact of disasters should not be under-estimated. In fact, local coping mechanisms must form the basis of international development support.

Preparing for floods in the North Indian state of Bihar

Since 2002, Tearfund partner organisation Discipleship Centre (DC) has been working with five villages in Bihar, North India, to reduce vulnerability to flooding. Socially and economically poor and geographically isolated, the villages rarely benefit from government aid programmes, and they are subjected to monsoon flooding for three months of every year. Lives, livestock and houses are frequently lost.

With no plan to respond to the floods, the people were ill prepared, despite the fact that they have occurred every year for the past 20 years:

- Villagers had no safe route to escape the rising floodwaters.
- A lack of unity within and between the villages meant everyone looked after themselves, rescuing possessions, livestock and people in a haphazard and disorganised manner.
- Boats for rescue purposes had to be hired from local landlords, or banana stems were floated on the water as makeshift rafts.

¹ International Federation of Red Cross and Red Crescent Societies, World Disasters Report 2001

² International Federation of Red Cross and Red Crescent Societies, World Disasters Report 2002

³ Ibid

- Flood-related diseases were common, especially as floodwaters submerged and clogged hand pumps leaving villagers with no safe water, and forcing them to drink from the polluted river.

The people wanted to improve their situation, and so Discipleship Centre mobilised each village to form a Village Development Committee (VDC), and four teams of volunteers were trained in flood preparedness. Each VDC oversees the teams, who in the monsoon season are responsible for giving early warnings and managing evacuations, including manning rescue boats and caring for the most vulnerable people. The teams are recognised by their uniform, and meet on a regular basis to learn first aid and practice evacuation procedures.



*Volunteers organise an evacuation drill using a boat supplied by Tearfund partner, the Discipleship Centre.
Photo: Tearfund/Caroline Irby*

Discipleship Centre also mobilised the village communities to build raised embankments, connecting the villages to each other and to the main road, thereby providing an escape route during the monsoon season. Culverts were built to reduce water pressure, and tube wells with raised hand pumps were constructed to guarantee a supply of safe drinking water even when flood levels rise.



*Raised platforms for hand pumps ensure that the flood waters do not contaminate or prevent access to water supply
Photo: Tearfund/Caroline Irby*

The measures have proved effective at saving lives and property. Floods in 2003 were severe, but no lives were lost to drowning or flood-related illness, and very few livestock perished.

"In the past we all used to dread the flooding season... because we did not know if we would survive. Now we have peace because all the people know we can save ourselves"

Bihar community member

There have been other unexpected benefits too. The rescue boats are generating income through being hired out for other purposes, and the raised embankment is providing a valuable connection to the main road for trading. The villagers have learnt the value of community cooperation, and developed confidence and leadership skills. Being more aware of their needs, and their potential to meet those needs, has resulted in them collecting money to fund a new school.

The measures to reduce flood risks are not just saving lives; they are extremely cost-effective too. A cost benefit analysis, looking at the loss of lives, livelihood assets (such as livestock), possessions and tools, has shown that for every 1 rupee invested in the programme 3.8 rupees are saved.¹

Preparing for drought in Andhra Pradesh

Tearfund has also been working alongside EFICOR (The Evangelical Fellowship of India Commission on Relief) since January 2003 on a programme to reduce poor communities' vulnerability to the twin problems of flood and drought.

Flooding is a prevalent problem along the major rivers and affects the area most years during the monsoon season (June to August). Drought during the summer months (April to June) also poses a serious threat to communities' survival. Between 2000 and 2004, the region has suffered from below average rainfall and record high temperatures. During the drought, government wells dry up and villagers become reliant on river water, whilst agriculture also suffers as few villages have irrigation.

Alongside its flood work, EFICOR is also helping communities adapt to the droughts. It has provided improved varieties of rice, cotton, chilly and okra, which are more resilient to pests and more suitable to drought conditions. They have also facilitated tree planting and provided diesel powered irrigation pumps to two villages, benefiting approximately 35 farmers.

EFICOR's work has resulted in community empowerment, greater access to clean water and increased food security due to the new crop schemes. Moreover, the measures are not just saving lives; in being prepared for the floods and droughts that hit Andhra Pradesh, money is also being saved. A cost benefit analysis, looking at the loss of lives, livelihood, assets (such as livestock), possessions and tools, has shown that for every 1 rupee invested in the programme 13 rupees are saved.²

¹ 'Disaster preparedness programmes in India – A cost benefit analysis' by Courtenay Cabot Venton and Paul Venton (No 49 Network paper, Humanitarian Practice Network) November 2004.

² Ibid

Chapter 5

Shameful levels of investment

Research by Tearfund has revealed that, despite the clear economic and moral arguments for investing in reducing disaster risks, many institutional donors give it a very low priority within their overseas relief and development assistance.¹

Many donor organizations spend less than 10% of their humanitarian aid budgets on disaster prevention, have very few staff working on the issue and do not systematically assess disaster risks within their development planning and programming.

Indeed there is a long history of aid money being used to ‘bandage the wounds’ rather than ‘prevent the injuries’, with the international community often concentrating much of its efforts on responses after a disaster has taken place, such as emergency feeding, pulling people from the rubble and air-lifting people to safety.

For example:

Six months before the Mozambique flood disaster of 2000, its government appealed to the international community for US\$2.7 million to prepare for the impending crisis. It received less than half this amount. After the floods hit, Mozambique received US\$100 million in emergency assistance. Then, at a subsequent conference, a further US\$450 million was pledged by the international donor community for rehabilitation.²

Why so low?

In 2003 Tearfund undertook research to determine why donor organizations invest so little in reducing disaster risks. The research identified three key reasons:

1. Lack of understanding

Donor organizations informed us that their staff, particularly those working in development sectors, frequently lack awareness and understanding of what disaster prevention is and how it should be done. Most organizations suffer from a lack of communication between sectors and departments, and humanitarian specialists’ expertise and knowledge of the subject is not shared with development departments as a matter of course.

2. Lack of ownership

Another issue discovered by the research is that neither relief nor development sectors within donor agencies believe it to be their specific responsibility to reduce disaster risks. Each see it as primarily the responsibility of the other, and consequently the issue falls in the gap between relief and development processes.

3. Competition with other pressing issues

Donor organizations informed us that disaster prevention competes with other pressing humanitarian and development needs. In the battle for time and resources, other development concerns such as HIV & AIDS and conflict, are often prioritized. Moreover while relief specialists may try to reduce disaster risks, they also have to contend with rising numbers of disasters and an increased pressure to respond to these.

¹ Tearfund Natural Risk Reduction Report, October 2003

² Tearfund report October 2003: Natural Risk Reduction – The policy and practice of selected institutional donors

Lack of political will

Ultimately, though, none of these three issues should prevent organizations from investing more in equipping vulnerable communities reduce disaster risks. Tearfund has developed a number of recommendations to address the problems outlined above that donor organizations themselves have agreed can, and should, be implemented.¹ The only factor preventing organizations from tackling these issues is lack of political will to do so.

After all, taking a proactive approach to disasters is not a new phenomenon - most rich countries take measures to reduce the impact of disasters on their **own** countries and people. For example, Japan has a state of the art national response mechanism for earthquakes; the Americas have a pacific early warning system for tsunamis, whilst London is protected from flooding by the Thames Barrier. It is clear, therefore, that rich nations, when facing a threat to their security or well-being, can and will mobilise and invest massive resources to protect their interests. Yet many do not do the same for poor countries.

This was most recently evident at the World Conference on Disaster Reduction held in Japan in January 2005. Held just four weeks after the South Asia tsunami disaster, the conference offered an unprecedented opportunity for governments to commit to concrete action on reducing disaster risks in poor countries. However, while some progressive, forward-thinking governments worked hard to strengthen agreements made at the conference, others worked equally hard to weaken them and would not permit any targets and time-frames in the final action plan. Consequently the action plan has no meaningful deadlines for its implementation.

Rich nations do, interestingly, often plough major resources into relief and recovery operations once a disaster has struck. This could be due in part to the fact that relief and recovery operations for major disasters are highly visible and governments can acquire profile though being seen to respond to them. Measures to reduce disaster risks, while crucial, may seem less glamorous. As one disaster prevention expert observed, it is hard for governments to “invest now to prevent something that may not happen”.

Yet taking an apathetic approach to reducing disaster risks is totally unacceptable from a moral viewpoint, and highly illogical from a financial one. As Everett Ressler² observes, ‘...*in light of increasingly fragile social, political, economic and natural environments, the longer we delay in addressing risk reduction and preparedness, the greater the impact, scale and cost of emergencies*’.

Marcus Oxley, Tearfund’s Disaster Management Director asserts, “*Tearfund recognises that preventing disasters depends in part upon our ability to build just and equitable social, economic, political structures and processes, and affirms the moral duty of all people (particularly the non-poor) to accept and fulfil their responsibilities to uphold the rights and entitlements of the poorer members of our society.*”

¹ Tearfund hosted a conference in 2003 at which donor organisation delegates agreed on the means and methods of adopting a systematic approach to reducing disaster risks

² Everett Ressler, Senior Programme Officer, Office of Emergency Programmes, UNICEF

Chapter 6

Where on earth to begin...

Disasters rarely strike without any warning at all. It may not be possible to predict the precise location and time of a natural hazard, but it is possible to assess the most high-risk areas of the world. With this information it is possible to start working in those areas to reduce the impact of disasters before they strike.

3 countries most vulnerable to earthquakes (1980-2000)

Armenia
Iran
Yemen

3 countries most vulnerable to cyclones (1980-2000)

Honduras
Nicaragua
Cape Verde

3 countries most vulnerable to floods (1980-2000)

Venezuela
Somalia
Morocco

3 countries most vulnerable to drought (1980-2000)

DP Republic of Korea
Mozambique
Ethiopia

Source: UNDP, Reducing Disaster Risk, A Challenge for Development.

The relative vulnerability of a country to a given hazard is calculated by dividing the number of people killed by the number exposed. When more people are killed with respect to the number exposed, the relative vulnerability to the hazard in question is higher.

Conclusion

The last ten years have witnessed an increased number of natural disasters that have killed over 475,000 people, affected more than 2.5 billion people and cost an estimated US\$ 690 billion in economic losses. Taking into account the Indian Ocean tsunami, the number of those killed has risen to over 675,000. With climate change, more and more people are becoming increasingly vulnerable to a range of environmental disasters.

Simple, cost effective measures like evacuation and rescue training and storing food and medical supplies can ensure that disaster prone communities are able to cope with disasters when they strike. For example, 300,000 people did not need to die in the South Asia tsunami: this figure could have been significantly reduced if people had been trained to recognise the signs of impending danger and knew what to do in such a situation.

The rich world's scant investment in reducing disaster risks is illogical and indefensible. It makes no moral or economic sense to ignore the urgent need for this, when it is clear that investing in it saves lives, livelihoods, property and safeguards development and poverty reduction progress.

Hopes were raised at the World Summit on Sustainable Development in 2002, when governments agreed to "Reduce the risks of flooding and drought in vulnerable countries" and "Provide financial and technical assistance to strengthen the capacities of African countries...for effective disaster management, including early warning systems, prevention and preparedness". Yet where is the evidence for this in Africa today? Three years on, Africa is more vulnerable than ever to extreme events such as drought. At the World Conference on Disaster Reduction in Japan, 2005, in the aftermath of the tsunami, many governments showed breath-taking complacency over the need for urgent, time-bound and funded action to protect vulnerable people from disasters.

Governments must also make faster, more effective progress with tackling climate change and poverty – which is increasing disaster risk across the world. Northern production and consumption is primarily responsible for global warming, with industrialized nations emitting 80% of the world's green house gases. Developing countries have contributed the least to climate change yet they suffer most from its effects. Therefore, logic and moral duty requires that rich, industrialised nations should be the first to address their patterns of trade, production and consumption and take the lead in reducing greenhouse gas emissions. The US contributes 25% of the world's emissions, but the US administration has refused to accept binding cuts on emissions through ratifying the Kyoto Protocol. The price and folly of this has been partly revealed through hurricane Katrina.

A more systematic approach to reducing disaster risks is needed, where preventive measures are integrated into all relief and development planning and programming in vulnerable regions.

Unless governments do this as a matter of priority, preventable disasters will continue to undermine the efforts of poor people to escape poverty and the efforts of rich countries to help them. Many governments, clearly, have not yet grasped the urgency of this race.