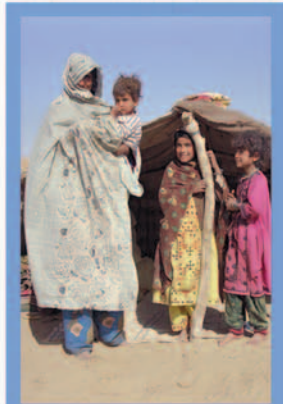


RETHINKING DISASTERS



Why death and destruction is not nature's fault but human failure



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Front cover images (Clockwise from top) :

Villagers wade through flood water in Birathi Village, Darbhanga, Bihar after the embankment breach.
Mani Kumar/India/Oxfam/2007

Sahabudin , Rezia with their children, Rezaul, Ziarul, Bilkin in a makeshift shelter on the river bank. The family has been displaced from their home due to erosion.
Jane Beesley/Bangladesh/Oxfam/2007

Zar Bibi and her family have travelled from Raik in Afghanistan to Baluchistan in the hope of escaping from the drought; only to find themselves facing the same conditions here.
Annie Bungeroth/Oxfam/Pakistan/2001

Village task force rescues people and livestock from flooded areas in Nepal.
Oxfam/Nepal/2007

RETHINKING DISASTERS

*Why death and destruction is not nature's fault
but human failure*

A destructive combination of earthquakes, floods, droughts and other hazards make South Asia the world's most disaster-prone region. The effects are aggravated by climate change, unsuitable social and development policies and environmental degradation. The effect is to slow or block development and keep millions trapped in poverty.

It does not have to be this way. Our experience shows that successful disaster risk reduction policies, integrated into development work, save lives and money, making vulnerable communities more resilient and protecting development gains. This report examines how to achieve those goals – and the cost of failure.



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LIST OF ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|---|
| DRR | - | Disaster risk reduction |
| GDP | - | Gross Domestic Product |
| GNI | - | Gross National Income |
| IPCC | - | Intergovernmental Panel on Climate Change |
| IUCN | - | The World Conservation Union |
| NGO | - | Non-governmental organisation |
| SAARC | - | South Asian Association for Regional Cooperation |
| UNFCCC | - | United Nations Framework Convention on Climate Change |
| UNHCR | - | United Nations High Commission for Refugees |
| UNICEF | - | United Nations Children's Fund |

EXECUTIVE SUMMARY : RETHINKING DISASTERS

Catastrophic earthquakes, calamitous floods and deadly droughts: whether the appalling events are unpredictable misfortunes or seasonal dangers, South Asia is the world's most disaster-prone region when counting the human cost. In recent years, the 2004 Indian Ocean tsunami and the 2005 Kashmir earthquake have underlined the region's vulnerability on a shocking scale - those two events alone killed more than 120,000 people and left millions homeless in the Subcontinent.

Annual monsoon rains frequently leave a trail of tragedy and destruction as school buildings collapse, roads are waterlogged, and mud-slides devastate shanty towns. The 2007 South Asia floods provided a dramatic example, affecting some 30 million people. In the dry months, there are increasing reports of deaths due to heatwaves or starvation in the arid regions of India, the highlands of Nepal, many areas of Afghanistan, and the Sindh province of Pakistan.

Disasters not only cause immediate suffering but hold back long-term development. Between two and six per cent of South Asia's gross domestic product (GDP) is lost to disasters every year. And it is the poor who suffer most. Following the 2006 flood in Sindh, for example, struggling farmers with few assets to fall back on lost 60 percent of their annual income because of damage to their cash crops.

The extent of damage wreaked by natural events is not solely down to nature. Poverty, exclusion, inequality, as well as inappropriate political decisions and actions all play their part. In other words, **social conditions shaped by humans increase people's vulnerability to disasters and make recovery more difficult.**

A home made from flimsy metal sheeting, for example, is far more easily destroyed than a more substantial one. Corruption and cost-cutting lead to infrastructure that is too weak to cope with natural shocks. Ineffective monitoring and communication lead to loss of life and property that fast and accurate information can prevent. Poorly constructed embankments and other flood control measures often exacerbate risks instead of reducing them. If mangroves had not been destroyed in Sri Lanka and south India, they could have provided a vital shield against the onslaught of the 2004 tsunami.

Additionally, inequitable or poorly designed responses to disasters allow short-term crises to become long-term ones. Women, minorities and lower caste people often suffer discrimination in the aftermath of a disaster - deepening their vulnerability to the next one.

Appropriate policies and preparations, on the other hand, save lives and money. The Kashmir earthquake, which killed 75,000 people, was not much greater in magnitude than Japan's Great Hanshin earthquake, which killed 6,000 people. (Since the 1950s, Japan has consistently spent around one per cent of its annual budget on disaster counter measures.)

During the 2007 South Asia floods, families in flood-prone areas of South Asia where Oxfam was working were protected from severe flood damage because our partners had already enabled villagers to form disaster-preparedness committees, watch out for early signs of floods, rehearse evacuation plans, raise their homesteads above likely high water levels, construct flood shelters, and store grain.

Preparation can make an enormous difference. In Bangladesh, the creation of early warning systems, anti-cyclone shelters and other risk reduction measures has saved tens of thousands of lives. Although the population in Bangladesh has more than doubled in 40 years, the toll from the biggest cyclones has plummeted. When Cyclone Sidr struck in November 2007, an estimated 3.2 million Bangladeshis were evacuated from the coastal areas and over two million were already in special shelters when the cyclone hit. About 4,000 Bangladeshis died - compared with around 140,000 in a similar cyclone in 1991 and up to 500,000 in 1970.

Our experience shows that preparedness costs a fraction of what the response can cost, saving money as well as lives. For example, Oxfam has helped Bangladeshi families buy radios, each costing a minimal \$12, to monitor weather forecasts. However, this approach requires attention and commitment beyond times of emergency.

Moreover, when disasters do strike, the inclusion of risk reduction principles into emergency response and recovery plans can ensure that affected people are less vulnerable than before.

Adding greater urgency is the fact that **climate change** - for which rich countries have been overwhelmingly responsible - **is making people even more vulnerable to shocks.** Two thirds of South Asia's disasters are climate-related, and global warming will increase the frequency, severity and unpredictability of extreme weather events - as the 2007 South Asia floods illustrated dramatically. An increase in temperature beyond two degrees Celsius will cause sea levels to rise dangerously, threatening coastal areas with flooding and drinking water sources with saltwater contamination. Such temperature rises are predicted to cause Bangladesh to lose one tenth of its rice production and one third of its wheat production over the next 50 years.

The Hyogo Framework on Disaster Risk Reduction, agreed in 2005 by countries across the world alongside regional and international organisations, sets out three strategic goals:

- The integration of disaster risk reduction into sustainable development policies and planning
- Development and strengthening of institutions, mechanisms and capabilities to build the resilience of communities to hazards
- The systematic incorporation of risk reduction approaches into emergency preparedness, response and recovery programmes

Unfortunately, national and donor governments have so far failed to put in place the policy and practices needed to realise these commitments. The good news, however, is that if urgent action is taken, this failure can be put right, lives and livelihoods saved, and communities made safer - while saving money in the long term.

This report draws on Oxfam's experience of preparing for and responding to disasters across South Asia. It sets out what decision-makers need to do reduce people's vulnerability to natural disasters in South Asia.

Chapter 1 explores the ways in which disasters reflect unequal development and disproportionately affect the poor.

Chapter 2 explains how disasters, combined with the lack of effective disaster risk reduction policies, restrict South Asian countries' economic development

Chapter 3 studies how climate change is exacerbating the threat from disasters and making life harder for the poor, adding even greater urgency to the need for action.

Chapter 4 analyses 'best practice' in reducing risk and vulnerability. It shows that risk reduction is achievable if the will is there, and gives examples of approaches that could save many lives when appropriately applied across South Asia.

Chapter 5 sets out what national governments and international donors in South Asia need to do, and includes specific recommendations for each of the countries of South Asia, that governments can use to check their own progress and citizens can use to hold governments to account.

In the chronically drought-prone areas of Bundelkhand, India, Shanti Devi is brimming with optimism. Disaster risk reduction programmes have changed her life.

'Five years ago our lives were very difficult. Now things are better. Though there's been little rain, we have built embankments in our field. Our situation has improved. We are planting our land and, because of this, we have our dignity.'

The future is not yet written, and we can help write it. **Natural hazards do not have to result in human catastrophes.** By implementing cost-effective plans based on the recommendations below, policymakers can not only save lives but also transform them.

Recommendations

South Asian governments need to:

- Reduce underlying vulnerabilities by tackling malnutrition, expanding and improving public education, health, water and sanitation systems, and combating discrimination against women, ethnic and religious minorities, and "lower" caste people
- Invest in and integrate disaster risk reduction principles in all development planning in accordance with the Hyogo Framework. These include effective research, monitoring and analysis, promoting risk reduction awareness, sharing relevant information, developing early warning systems, enforcing appropriate building codes, protecting natural environments, creating social and financial safety nets, conducting preparedness drills and taking into account the effects climate change
- Support community-level preparedness by ensuring that appropriate emergency supplies are available, thus helping well-prepared communities to act as the first line of defence
- Work with NGOs to help prepare communities for disasters and to strengthen monitoring processes - while accepting that governments, as the guardians of human rights and freedoms, bear the primary responsibility for reducing the risk of disasters, saving and protecting lives.
- Cooperate with each other in sharing immediate data with all the region's disaster management agencies, while working through the regional organisation SAARC to promote South Asian approaches to disaster risk reduction.
- Work for an effective and equitable international agreement to tackle climate change. With rich country support, South Asian countries can do this by adjusting their development planning appropriately to minimise environmental harm

Rich country governments need to:

- Provide at least 0.7 per cent of their Gross National Income in international aid, of which disaster risk reduction - based on Hyogo Framework principles - is a key component. Development assistance should also address underlying risks by expanding and improving public education, health, water and sanitation systems, as well as tackling discrimination against women, minorities, and "lower" caste people
- Support NGOs in their disaster preparation activities and assist South Asian governments to expand successful local disaster management approaches nationally
- Ensure that emergency responses integrate key disaster risk reduction principles
- Help achieve an effective and equitable international climate change agreement. They can do this by significantly reducing their greenhouse gas pollution (in order to restrict global warming to less than two degrees Celsius above pre-industrial levels) and by providing additional financial support above existing aid levels to help South Asian countries meet the costs of adapting to climate change



PAYING THE PRICE FOR POOR POLICIES

Vulnerable groups, such as the poor, women, and marginalised minorities, always bear the brunt of natural disasters. In the recent floods in Karachi in June 2007, for example, most of the affected families were concentrated in Gadap Town, a cluster of villages with mud houses and flimsy electric poles on the city's eastern outskirts.¹

Nature does not dictate that poor people, or women, should be the first to die. Cyclones do not hand-pick their victims. Yet, history consistently shows that vulnerable groups end up suffering from such events disproportionately. Underlying social conditions and structures determine who is most vulnerable to the impact of natural hazards such as extreme weather events, and disasters consequently follow.

In the 1991 Bangladesh cyclone, for example, four times more women died than men.² This was largely due to social and cultural factors, often exacerbated by poverty, that restricted their movements to vulnerable locations.

Women, poor people, minority communities and *dalits* (people perceived as very low caste) are more prone to disaster than others. Disasters are therefore an issue of unsustainable and unequal development at all levels - from the global to the local.

Indeed, advocates of sustainable development quote the formula: *risk of disaster = hazard × vulnerability*. It recognises that reduction of both hazard and vulnerability reduces risk and saves lives and livelihoods. And it shows that the extent of damage wrought by 'natural' disasters is not an immutable part of 'nature' but is something that we can change.



Fig. 1: Risk of Disaster as a product of hazard events and vulnerability of populations.

Source: Oxfam America, 2004, *Weathering All Storms: Lessons in Risk Reduction from Cuba, Washington: Oxfam America*

The global picture: low resilience, more harm

Countries with low levels of human development are significantly more vulnerable to the impacts of natural hazards. Consequently, they run a higher risk of such hazards turning into full-blown catastrophes. Although on average the 50 poorest countries are exposed to only 11 per cent of the world's natural hazards, they suffer 53 per cent of deaths from disasters each year. In contrast, countries with high levels of human development, despite their exposure to 15 per cent of all hazards, account for only 1.5 per cent of the death toll.³

The evidence is unequivocal. Countries with low levels of human development have limited resources for resilience

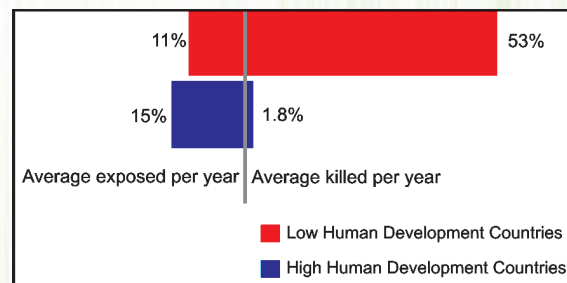


Fig. 2: Excessive disaster mortality compared to exposure in low human development countries

Source: UNDP (2004), *Reducing Disaster Risk: A Challenge for Development*, Bureau for Crisis Prevention and Recovery, United Nations Development Programme, New York

Box 1: Living with risk in the *char* lands

Over the past three decades, low-income groups have suffered most from Bangladesh's annual floods. Nevertheless, many choose to live in the *char* and *haor* areas, on islands of silt in the major rivers, because of, not despite, the annual *borsha* - the rain and inundation. The *borsha* deposit rich silt on farmlands and increase the fertility of the soil and crop productivity to such an extent that inundation is actually a lifeline for local farmers.

However, extensive floods in 1998 and 2004 caused much death and devastation. The most vulnerable people, including the landless, often have few other options but to live with high risks in these fragile habitats, where the line between nature's bounty and nature's fury is thin.

The people of *char* Pepulia in Gaibanda district are mostly migrant landless labourers and marginal farmers. Their livelihood is entirely dependent on nature. A flood can occur anytime including before the harvest and damage the standing crops entirely. Similarly, droughts are not uncommon in this fragile land though largely less publicised.

Oxfam partner Samaj Kalyan Sangstha (SKS), after discussions with the farmers, formed a producer group of 15 farmers and provided them with a shallow tube well for irrigation. They use the machine on their lands by rotation during the drought and sometime rent it to others. This enables them to water the crop in the dry season and they have begun cultivating different crops like maize, paddy, jute and different vegetables around the year. To illustrate their changed fortunes one farmer explains, 'now we can eat twice a day but just a year back we could not even manage one meal in a day, we used work as day labourers but now we need to employ labour for harvesting.'

(Source: Rosalind Shaw (1989), 'Living with floods in Bangladesh', *Anthropology Today*, 5 (1): 11-13).
The shallow tube well changes the lives of producer group

against, and recovery from, the impact of disasters. Japan's 1995 Great Hanshin Earthquake, measuring 7.3 on the Richter scale and labelled as one of the worst disasters to strike the nation in decades, left 6000 people dead. By comparison, the 2005 Kashmir Earthquake, only slightly more powerful and despite being in an area with a lower population density, left 75,000 people dead - over 12 times more.

This pattern is repeated on a national, regional and local level. The areas where people were hardest hit by the floods of 2007 - Bihar and Uttar Pradesh in India, the Terai region in Nepal, and the Rajshahi and Sylhet divisions of Bangladesh - are at the bottom of the league-table of national poverty indicators.

Poverty increases vulnerability

Poverty forces people to live in dangerous locations and unsafe shelters. An urban slum dweller in Chittagong city whose house is made of plastic or zinc-coated tin sheeting will be more vulnerable to the ravages of a cyclone or floods than the owner of a concrete house.

In the 1998 cyclone in the Indian state of Gujarat, it was the thousands of salt-pan workers living in shanty towns close to their place of work who were most likely to die.⁴ Three years later, when an earthquake struck the Bhuj area of Gujarat, deaths were concentrated in the old, dilapidated buildings of the town centre and on the periphery, which housed the rural migrant population.⁵

The story seldom changes. The 1993 Latur earthquake in rural India measured only 6.3 on the Richter scale, but it decimated more than 1500 villages with flimsy houses. In Sri Lanka more recently, in areas farther from the shore, the tsunami waves destroyed the fragile houses of the less well-



Fig. 3: Carpenter Nila Bhai Norgha's house, destroyed by the earthquake in Gujarat

Source: Shailan Parker/Oxfam/India/2002

off, made of wood, clay and thatch, leaving the more expensive brick-built houses standing and enabling people to take refuge on their upper floors.⁶

The options open to people depend on their wealth. Better-off families are more likely to obtain shelter with friends or relatives, and also to recover at least part of their incomes and assets. On the other hand, in Vaharai, one of the poorest areas of Batticaloa district in Sri Lanka, 80 per cent of tsunami survivors ended up in camps, where most of them remained for more than six months.⁷

Gender discrimination costs lives

Every time a natural disaster strikes in South Asia, invariably more women die than men. In Nagapattinam and Cuddalore, the districts of the Indian state of Tamil Nadu that were worst affected by the tsunami, twice as many women died as men.⁹ In areas of Batticaloa district in Sri Lanka, four-fifths of those who died were women and girls.¹⁰ In the 2005 Kashmir earthquake, too, more women died than men.¹¹ More than a decade earlier, statistics gathered after the Latur earthquake reveal a similar gender bias.¹²

Women constitute the primary care-givers in South Asian families. Thus, they are more likely to die during disasters because they stay at home (commonly a flimsy construction) to look after children and the elderly, and are searching for their dependents immediately after a disaster has struck. During the tsunami, another reason for the large number of deaths among women was the sense of shame that kept them from running to the shore when the waves ripped their clothing. In the severely affected Nagapattinam district in India, women's inability to swim, in turn a consequence of cultural norms, proved fatal for many. Mortality rates among those who could swim were 60 per cent lower.¹³

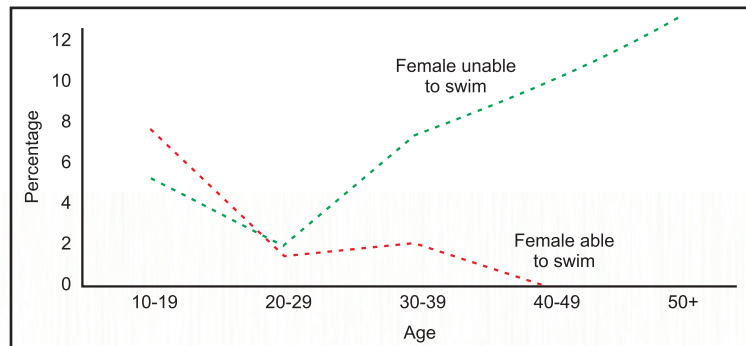


Fig. 4: The proportion of deaths amongst women as a function of age and ability to swim. Source: Guha-Sapir et al (2006), Risk factors for mortality and injury: post-tsunami epidemiological findings from Tamil Nadu. Centre for Research on the Epidemiology of Disasters (CREED) School of Public Health, Catholic University of Louvain

Box 2: More poverty, less funding?

Sahabudin, Rezia, and their children, Rezaul, Ziarul, and Bilkin, spend their days in a makeshift shelter on the river bank. The family has been displaced from their home in the inundated char areas. Sahabudin explains his predicament: 'We'll move some soil and raise our home, but we have no money to buy bamboo and housing material. We will have to go to the moneylenders. We're new here so most people are unknown to us...so that's another problem. We've come here because we think there will be more work opportunities in the fields.'

Sahabudin and his family have migrated, destitute and distressed, from the Rajshahi division in Gaibanda district. Rajshahi has the second-highest poverty rate in Bangladesh, with 51 per cent of its population barely able to eke out a living. However, a recent study indicates that the division received only 12 per cent of the funds available from the social safety-net programme (SSNP⁸).

The Bangladesh Statistical Bureau in 2006 produced research evidence to show that, ironically, divisions with high poverty rates receive less financial support than others. It is crucial to rectify this imbalance. SSNP, as a multi-targeted social-security programme with funds for disaster preparedness and the development of vulnerable groups, can go a long way to build equitable development. But its funds must be allocated on the basis of poverty indicators.



Fig. 5: Sahabudin, Rezia with their children, Rezaul, Ziarul, Bilkin in a makeshift shelter on the river bank. The family has been displaced from their home due to erosion.

Source: Jane Beesley/Bangladesh/Oxfam/2007

(Sources: Jane Beesley/Bangladesh/Oxfam/2007; Rezaul Karim Byron, 2007, 'Divisions with low poverty rates get more funds! Dismal Social Safety Net Programme', Dhaka: The Daily Star, 23 June 2007.)

In the 1993 Latur earthquake, women died largely because (conforming to patriarchal conventions) they slept indoors. In certain areas of North West Frontier Province in Pakistan, despite the violent shaking of buildings and concrete walls tumbling down, cultural requirements to cover themselves before they left the house meant that many women did not flee to the relative safety of the streets as quickly as they could otherwise have done.

Even slow onset disasters like droughts affect women more than men. In Pakistan's province of Baluchistan, the mass migration of men to cities means that not only do women have to take full responsibility for the children, but many have to walk as far as four kilometres for water every day. In the past decade in the Indian state of Rajasthan, in 82 per cent of hamlets it was women who had to eat less when the *Maha Akal* drought was at its peak.¹⁴

Such factors have important implications for disaster risk management. Studies show that women are more likely

to volunteer for projects in their communities for activities related to emergency management, perhaps realising their vulnerability. Women also tend to participate more often than men in grassroots organisations tackling community preparedness.¹⁵ Discriminatory restrictions and the cost of disasters disproportionately borne by women directly harm a community's ability to protect itself effectively and equitably.

On the other hand, a more equitable approach contributes to more effective disaster risk management - for example, by tapping into the skills and experience of women in building and maintaining local social networks.

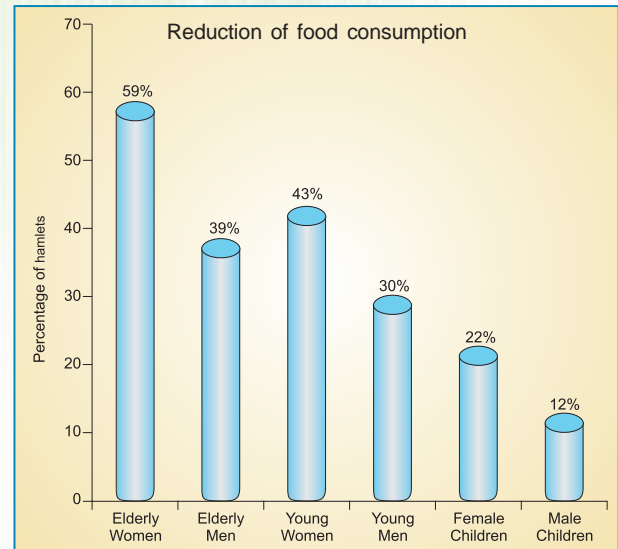


Fig. 6: Women bear the brunt of drought in the majority of the hamlets in Rajasthan. This diagram indicates the percentage of hamlets by groups with the largest drop in food intake.

Source: Sivakumar, Kerbart, 2004, *Drought, Sustenance and Livelihoods: 'Akal' Survey in Rajasthan*, *Economic and Political Weekly* January 17, 2004

Box 3: 'The drought has made life especially difficult for women'

Sitting in the shade of a tree, under the scorching afternoon sun in Gajjuvindh village in Gujarat, Hiri Ben's husband explains the web of misfortunes, which have affected their life. 'There had been an earthquake in Gujarat 50 years ago, so we realised what it was when everything started shaking. We all ran out of the house and didn't know what to do next. As there were tremors all day we were very frightened. All the houses collapsed - they were all made of mud.'

But this was not the first catastrophe to visit the family. Hiri Ben, while drawing the outlines of her dream home in the mud, reminisces woefully, 'The earthquake [2001] came on top of a cyclone [1998] and serious drought which, in some areas, is now in its seventh year.'

Hiri Ben asserts, 'The drought has made life especially difficult for women. We women go to collect water for drinking and cooking, and because of the drought we have to walk long distances. There is a pipeline in the village, but it never has water in it. It takes about half an hour to go and come back, and I have to go four or five times a day. Because of having to walk so far to fetch water, I can't go and work. My husband has to go and work, and I have to stay here. The effect is that we now earn half what we could before, as I am not earning.'

It seems to be no coincidence that disasters seek out and affect the most vulnerable - in the case of Hiri Ben and her family, three times in a decade. A resilient house in place of their mud huts and easy access to safe water would have gone a long way not only to alleviate their poverty, but also to protect them from disasters.



Fig. 7: Hiri Ben draws the outlines of her dream home in the mud.

Source: Shailan Parker/India/Oxfam(2002)

Source: Shailan Parker/India/Oxfam(2002)

Marginalisation is magnified

When disasters strike, socially excluded groups are at the greatest risk. Minorities and low caste people suffer more and find it harder to recover from disasters.

In western Rajasthan, *dalit* houses are often located in sand dunes up to nine kilometres away from revenue villages (the basic rural unit for administrative purposes), at the tail end of the drinking-water supply schemes. As the gender division of labour relegates women to fetch water, they have to bear the double burden of caste and gender. In Pakistan, religious minorities face similar discrimination. In Karachi, *katchi abadis* (slums or shanty towns), which are often inhabited by Sindhi Hindu religious minorities, are commonly located in low-lying flood-prone areas.

Disasters aggravate discrimination. In the aftermath of the tsunami in Tamil Nadu, discrimination against *dalits* in the provision of relief, the removal of bodies, and the refusal to share emergency shelters¹⁶ was rampant, reflecting thousands of years of the caste system. Across the Palk Strait in Sri Lanka too, minority religious communities faced discrimination in relief efforts.¹⁷

After the 2001 Gujarat earthquake, almost every village had camps segregated by caste and religion. In Anjar and Bhachchau towns, *dalits* and Muslims did not have the same access to adequate shelter, electricity, running water, and other supplies that were available to higher caste Hindus.¹⁸ More recently in the Rajasthan floods in 2006, *dalits* were asked to leave relief camps for fear of 'polluting others'.¹⁹

Such issues exacerbate conditions for the most vulnerable, raising the likely human and material cost of the next disaster and thereby slowing development and weakening potential protection for whole societies. The social exclusion of minority groups also results in a failure to exploit their experiences, knowledge and abilities that could otherwise contribute to more effective disaster risk reduction.

Defective development invites disaster

Development initiatives in themselves are not risk neutral - they can increase hazards and exacerbate vulnerabilities if they are poorly designed or implemented, or if they cause serious environmental harm.

Economists typically view a construction boom as a sure sign of a country's progress and growth. But sometimes newly constructed infrastructure simply invites disaster. Contractors often cut corners and do not execute engineering designs correctly. For example, they commonly omit the planned culverts in raised roadways, to save time and money.

The Shiberghan highway, which links Faisabad to Mazar-e-Sharif in Afghanistan, completed in the winter of 2005, was supposed to be one of the best roads in the country, but in fact its flawed design is an ecological disaster for local farmers. It blocks the natural drainage system, increasing the risk of floods and threatening to wash away their crops and mud homes.²⁰

The Centre for Handloom Information and Policy Advocacy (CHIP), an Oxfam partner in the Indian state of Andhra Pradesh, has documented evidence that shows how Pedana village in Krishna district, which had no prior history of



Fig. 8: Nagha Lakshami lost her house from the Vanagari Dalit Colony, Tamil Nadu, India after the tsunami.

Source: Rajendra Shaw/Oxfam/2005



Fig. 9: A devastated hospital in North West Frontier Province, Pakistan after the 2005 earthquake

Source: Oxfam/2006/Pakistan

inundation, now lies submerged because of an elevated cement road.²¹ Similarly, the Khuzdar Motorway in Pakistan has created obstructions to natural waterways because it does not provide adequate cross drainage.²²

Poor adherence to building standards plus the pervasive corruption across South Asia also result in high levels of urban risk. In the 2005 Kashmir earthquake, which affected three million people and left more than 600,000 families homeless, poor quality construction caused the collapse of school buildings, killing more than 18,000 students. Seismic-resilient standards in building codes have also been largely ignored in Afghanistan's reconstruction efforts, despite its being one of the most earthquake-prone areas of South Asia.

Short-sighted reactions to disasters also increase vulnerabilities. In Sri Lanka after the tsunami, imposition of an arbitrary coastal regulation zone distanced fishing communities from the shore, making it more difficult to pursue their livelihoods and slowing their recovery. Donor-led humanitarian responses sometimes sideline local leaderships and reduce the capabilities required for long-term resilience. In Afghanistan in 2002, when hundreds of thousands of tonnes of foreign wheat was brought in as food aid, wheat prices fell so low that many farmers abandoned their crops without harvesting them.²³

Poor economic development practices can thus contribute to 'natural' disasters through flawed implementation, over-emphasis on badly designed large projects, and environmental degradation.

On the other hand, as this report explains later in more detail, economic development or recovery plans that integrate disaster risk reduction principles into their design can avoid such pitfalls, saving both lives and money in the long term.

Conclusion: Stop blaming nature²⁴

“ For 200 years we've been conquering Nature. Now we're beating it to death.
Tom McMillan, 1990 *The Greenhouse Trap*²⁵ ”

The roots of the word disaster can be traced to the Latin word 'astrum', which means an event arising from an unfavourable constellation of stars. Disasters continue to be described as unexpected, unprecedented, unscheduled, unplanned, uncertain, unintentional and unseen. Nature is squarely blamed, and taming nature is then presented as the only solution. ("Control measures" like embankments and irrigation reflect that paradigm, and have therefore been common, despite their frequent counter-productiveness.)

However, if natural forces alone were to blame, then disasters would have had an equal impact on all people. This chapter has shown that they do not. Disasters invariably affect the most vulnerable, who commonly owe their condition to human policies and practices. By changing these, we can reduce vulnerabilities and thus lessen the impact of natural hazards.

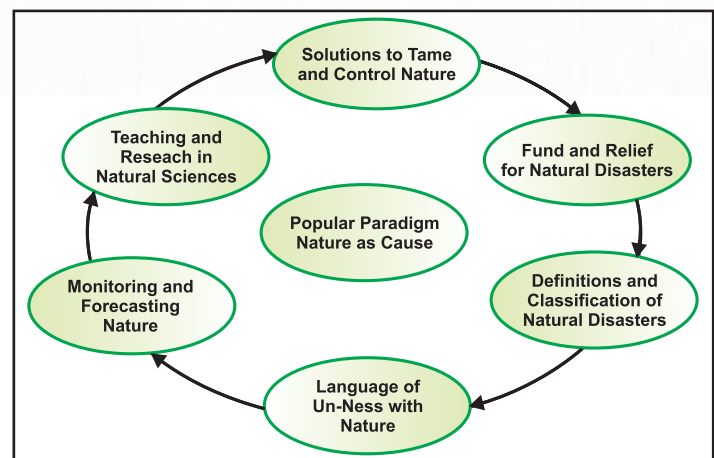


Fig. 10: Blaming and framing nature for disasters

Source: Anu Kapoor, 2005, *Insensitive India: Attitudes towards Disaster Prevention and Management*, *Economic and Political Weekly*, 15 October, p. 2551-2560

Box 4: Shelf-life expired: a breach of trust

Across South Asia, the floods that began in July 2007 have wreaked devastation leaving millions homeless. The monsoons often bring floods, but why have they been so deadly?

'The embankment broke, and all the water flooded into the village...it was up to our necks. The embankment is not in good condition...this is the problem.' Dukhni Devi, Bihar, India.

In the past 50 years in Bihar, while the length of flood-control embankments has increased 22 times, the flood-prone area has simultaneously increased 300 times, so that it now spans 7 million hectares (an area the size of Sierra Leone). There is a paradox here: expenditure on flood-control works is rising, while simultaneously there is an increase in flood damage.

Across South Asia, the trend persists. Governments have relied on mega-scale projects of embankments, dams, irrigation systems, and drainage canals with the explicit purpose of controlling disasters - but they have ended up exacerbating them. Embankments increase flood risk not only in downstream areas between embankments, but even in 'protected' areas, if the walls are breached. As water levels rise and embankments are breached and standing crops, homes, and lives are swept away.

In Bangladesh, the Coastal Embankment Plan, which for a decade benefited farmers with bumper crops of 'green revolution' hybrid rice, has now made people of south-west Bangladesh vulnerable to incessant floods, water logging, increased salinity, and river and coastal erosion, in addition to the natural hazards of cyclone and storm surge. A changing climate adds to this burden. Similarly in Pakistan, development planners had initiated mega drainage projects, to address the problems of soil salinity and decreasing agricultural production caused by the earlier adoption of intensive irrigation. Of these, Left Bank Out-Fall Drainage Project (LBOD) has been severely criticised, and the disastrous floods in Sindh in 2005 have exposed it as an ecological disaster. The common component of most of these mega projects is that they have been financed by large multilateral loans from the World Bank and Asian Development Bank. Maintenance of these large projects is tardy. Construction is beset with entrenched corruption. Often officials or wealthy landowners breach embankments to ensure that their own lands are protected, despite the inundation that will be caused elsewhere. The shelf-life of the embankments or large dam projects is usually only 10-20 years, after which communities are left to suffer from the impacts of environmental catastrophes.

Despite the overwhelming evidence of the risks, governments and multilateral institutions continue to invest in mega projects rather than community-based disaster-risk reduction and climate-change adaptation models. In India, the controversial River Interlinking Project is being promoted. In Bangladesh, the Flood Action Programme (FAP), initiated in the 1990s, faces extensive criticism from civil society. Despite widespread public protest in Dadu and Thattha districts in Pakistan, not only is the construction of the Right Bank Drainage Outfall (RBOD) continuing unabated, but the government has introduced its Water Vision 2025, with even more disastrous mega projects in mind.

Rather than risking these attempts to control nature through engineering approaches, it would be more effective to support communities to reduce their risk of living with nature's unpredictability (including climate change) by empowering them and investing in restoration of local water systems, natural drainage, the harvesting of rain water, and other sustainable adaptation techniques to protect against flood and drought. In India alone, 25 per cent of the monsoon run-off can be captured and stored as groundwater, and 75 per cent of this can be later retrieved for irrigation.



Fig. 11: Villagers wade through flood water in Birathi Village, Darbhanga, Bihar after the embankment breach.

Source: Mani Kumar/India/Oxfam2007

(Sources: M. Talpur, 2004, 'Experimenting With the Lives of the Poor: Right Bank Outfall Drainage Project', Islamabad: Action Aid Pakistan (RBOD); Ahmed and Ontal, 2005, 'Submerged into the deep: the plight and challenges aftermath of flood and waterlogging disasters in the South West region of Bangladesh', Dhaka: Uttaran; Rohan D'Souza, 'The Problem: Floods', Seminar, 478 - June 1999, p. 12-17; M. Bhatti 'Myopic, Divisive', Duryog Nivaran, Thakkar Himanshu (2006), What, Who, How and When of Experiencing Floods as a Disaster, South Asia Network on Dams, Rivers & People.)

ARRESTED DEVELOPMENT: THE COST OF INACTION

The failure to devise and execute effective disaster risk reduction policies holds back South Asian countries' economic development. With each "natural" disaster, progress in poverty eradication is at a minimum endangered and frequently eroded. As a result, vulnerability of poor people increases: deepening their poverty, forcing them into indebtedness, and preventing them from taking advantage of economic opportunities.

This section explores how frequent disasters stop South Asian countries reaching development goals, and why South Asian governments and donors must invest in disaster risk reduction. Otherwise, the region stands to miss the Millennium Development Goals (MDGs) as well as the targets of the Hyogo Disaster Risk Reduction Framework by 2015.

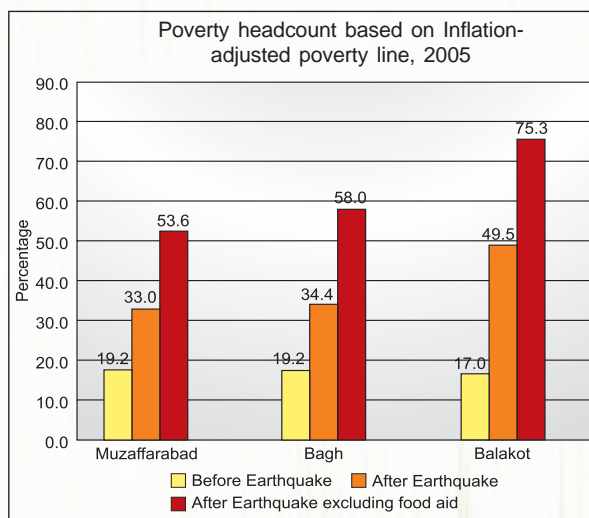


Fig. 12: Poverty headcount in the areas affected in Pakistan a month after the Kashmir earthquake shows a dramatic increase in absolute transitory poverty from 19 to 34 per cent.

Source: Helen Berton/2006/Oxfam/Pakistan Flood in Sindh Province: Findings of Rapid Assessment October 2006, Islamabad: Oxfam

Progress down the drain

“ One flood means the development goes back six steps in Assam. If you have progressed 100 per cent, then the flood means you go back 600 per cent.

Ravindranath,
Director, Oxfam partner,
Rural Volunteers Centre, Assam’ ”

Vulnerable households, especially those headed by women like Parboti Rani, are a classic example of development gains being literally 'washed away', with each succeeding disaster. 'We have to keep rolling like silt,' is a saying in Kazipur in Bangladesh, where 35 per cent of people have been displaced seven times or more by bank-line erosion.²

Landless labourers and those with precarious jobs have to forgo their income every day that their work is disrupted by bad weather. Those living a hand-to-mouth existence go without food. After the 1998 floods in Bangladesh, 70 per cent of households reported loss of income, ranging from 30 to 100 per cent of a month's wages, due to unemployment.³

Box 5: If an earthquake struck Kathmandu tomorrow ...

In 1934, 16,000 people died in Nepal's Kathmandu valley during the great Bihar earthquake, which measured 8.4 on the Richter scale. If a similar earthquake struck today, it would leave around 40,000 people dead, 95,000 injured, and 700,000 homeless, and it would damage 60 per cent of the buildings beyond repair. Ninety five per cent of the valley's water pipes and half the pumping stations would be destroyed. All electricity stations, nearly 40 per cent of electricity lines, and around 60 per cent of telephone lines would be out of order for up to a month. Roads and bridges would be seriously damaged, isolating Kathmandu's international airport.

Nepal is situated in the seismically active Himalayan mountain belt. More than 1000 tremors, ranging from 2 to 5 on the Richter scale, rock the mountain kingdom every year. The UN estimates that of the 21 vulnerable cities around the world, Kathmandu city is at greatest risk.

In Nepal, which is predicted to experience a catastrophic earthquake at any time in the next decade, Oxfam partners have used the mass media to disseminate information on 'Building Construction Rules 2006', especially in the rapidly expanding urban areas.

(Source: IFRC, 2002, World Disaster Report 2002: Focusing on Reducing Risk, Geneva: International Federation of Red Cross and Red Crescent Societies)

Women are the most badly affected. The 1998 Bangladesh floods saw a documented increase in chronic energy deficiency (CED⁸) among women. After the 2005 Gujarat floods, in one village the women said that if they made three rotlas (bread), their husband would eat two and the wife would get one, or even less.⁹

Borrowing money is one of the main coping mechanisms used by households affected by disasters. In India for the last six years farmers in the drought-prone agrarian belts of Vidarbha have been committing suicide in despair at crop failure and growing indebtedness.¹⁰

Unless safety nets are developed, the multi-pronged impact of disasters in terms of income and asset loss, food insecurity and indebtedness will continue to condemn the most vulnerable communities to slide ever further into a vicious spiral of poverty.

In Afghanistan, after seven years of drought and absolute decay of all traditional coping methods, more than 2000 families migrated in distress to Mazar-e-Sharif and Herat, begging on the streets as a last resort.



Fig. 14: Zar Bibi and her family have travelled from Raik in Afghanistan to Baluchistan in the hope of escaping from the drought; only to find themselves facing the same conditions here.

Source: Annie Burgeroth/Oxfam/Pakistan/2001

Millennium Development Goals threatened

“ *The silent majority will have to speak, or it becomes the silenced majority.*

*Baba Amte
Social reformer, India¹²*

”

The Millennium Development Goals aim to halve world poverty by 2015. If current trends continue - especially the increasing frequency of climate-related events - directly or indirectly disasters will be a key factor in preventing the achievement of the MDGs.¹³ In Nepal, poverty and hunger are intimately tied to the sudden loss of agricultural land through flooding and landslides. In Afghanistan, the effects of drought in the 1990s are worsening food security and poverty in the current decade.

If South Asia is to achieve the Millennium Development Goals by 2015, then disaster-risk management needs to be included in national strategic plans. Bangladesh is one of the first countries to have adopted disaster-risk analysis in its interim Poverty Reduction Strategy Papers (PRSPs). It has designed a Corporate Plan 2005-2008 - A Framework for Action. The Plan presents the national vision to '...reduce the vulnerability of people, especially the poor, to the effects of natural, environmental and human induced hazards...'. The rest of South Asia has a long way to go, however.

Setbacks to growth

Disasters often reduce the pace of economic growth and development. In the case of fast-onset disasters these effects are sometimes at least partially mitigated by external funding for reconstruction. But in the case of slow-onset disasters like droughts, with little impetus for reconstruction or foreign aid, the economic damage can be even longer-lasting.

While a country as a whole may not suffer from the effects of a natural disaster, the local economy and livelihoods take a long time to recover. In the aftermath of a disaster, in response to supply-deficits and hoarding, inflation sends food prices soaring, which gravely affects poor people.

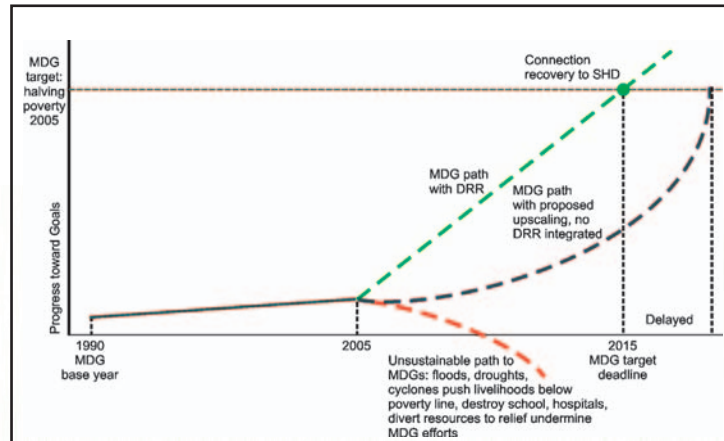


Fig. 15: Paths to attaining MDGs with and without disaster risk.

Source: *International Strategy for Disaster Reduction* <http://www.unisdr.org/eng/mdgs-drr/review-8mdgs.htm>

Destabilised governance

“Disasters often highlight the social struggles in a society and underscore the inherent inequities within a political system. A disaster makes it very evident that the poor are vulnerable because they are poor, and this can lead to profound political and social changes within a society: many governments destabilise in the years immediately following a disaster

Fredrick Cuny, 1983
Disasters and Development”

Disasters overload political systems. They multiply societal demands, reveal organisational, administrative, and moral deficiencies in government systems, and increase public dissatisfaction.¹⁴ In 1970, the cyclone that killed approximately 400,000 people in erstwhile East Pakistan (now Bangladesh) led pre-existing dissident political factions to unite for political autonomy in an already strife-ridden region.

Infrequent risks, however, act as a deterrent to political will and action. If politicians calculate that a serious hazard is unlikely to occur within their political lifetime, they are less likely to act to reduce risk.

Box 6: Everybody still loves a good drought

P. Sainath, in his celebrated work *Everybody Loves a Good Drought*, chronicles the extent of corruption entrenched in both development and humanitarian efforts in the poorest districts of India in the early 1980s. Two decades later, it seems that everyone still loves a good drought. David Nussbaum of Transparency International has aptly said that 'Corruption isn't a natural disaster. It is the cold, calculated theft of opportunity from the men, women and children who are least able to protect themselves.' The Bihar flood scam is a just the tip of the iceberg.

Time magazine feted the district magistrate of Bihar as an Asian hero for his humanitarian efforts to provide relief to three million people affected by the flash floods in July 2004 in India's poorest state. A year later, he was arrested. A national newspaper alleged that he had siphoned off INR 170 million - 5500 times India's per capita income - into a fraudulent private account. Apparently less than one per cent of the money reached the affected communities. Relief materials were air-dropped at a cost eight times their value. On investigation it was found that these food packets of sattu (roasted horse gram powder) were at least four years old!

Entrenched corruption is acutely disastrous. Analysis of 344 earthquakes in 42 countries in the past three decades, has revealed that a country's level of public-sector corruption is significantly positively correlated with the fatalities caused.

(Sources: Misra D, 2005, *The flood that was, the flood to come, Analysis, Himal South Asia*, July
Monica Escaleras & Nejat Anbarci & Charles Register, 2006. "Public Sector Corruption and Natural Disasters: A Potentially Deadly Interaction," Working Papers 06005, Department of
Economics, College of Business, Florida Atlantic University, revised Aug 2006.)

CLIMATE CHANGE AND ENVIRONMENTAL CHALLENGES

“Climate change is a serious risk to poverty reduction and it threatens to undo decades of development efforts.”

Poverty and Climate Change
Eighth Conference of Parties, UNFCCC
Delhi, India, 2002

”

Adding even greater urgency to the need to 'rethink disasters' is the fact that climate change - for which rich countries are overwhelmingly responsible - is making people in South Asia even more vulnerable to disasters. Moreover, climate change is becoming a growing factor behind other environmental changes. Unfortunately, human policies and practices have already caused massive environmental degradation, which in turn increases the risk of disaster.

Two thirds of South Asia's disasters are climate-related¹, and global warming will increase the frequency, severity and unpredictability of disasters caused by the weather. The spread and force of the 2007 South Asia floods are testimony to this increasing uncertainty. A rise in temperature beyond two degrees Celsius will cause sea levels to rise, risking coastal flooding and salt-water infiltration into drinking water.

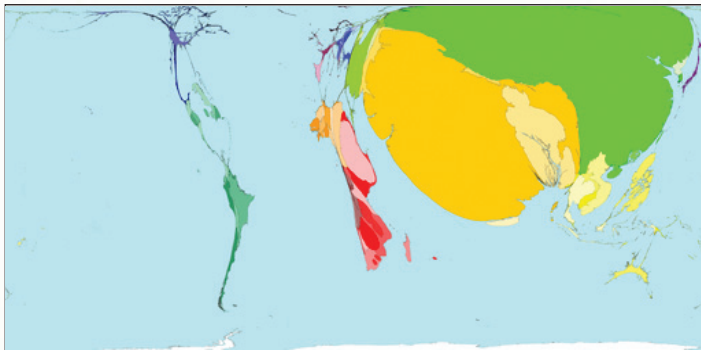


Fig. 16: The huge orange bulge of South Asia in this distorted world map indicates that 43 per cent of people affected by disasters between 1975 and 2004 live here

Source: www.worldmapper.org SASI Group (University of Sheffield) and Mark Newman (University of Michigan)

If climate change progresses unhindered, South Asia is expected to bear the brunt of global warming. In 2006, it was confirmed that the island of Lohachara in the Bay of Bengal, once home to 10,000 people, had become the first inhabited island to be wiped out by rising sea levels².

Scientists concur that the ferocity and frequency of hazard events such as cyclones, hurricanes, and earthquakes have increased³. These will all cause, among other consequences, excessive mortality and chronic malnutrition.

Persistent droughts in the past decade, arguably aggravated by global climate change, have affected more households in southern and western Afghanistan than the recent armed conflict⁴. Extreme weather events, including droughts, are widely predicted to become more common as climate change progresses.

Regions in South Asia are becoming susceptible to multi-hazards. In 2005, a large part of northern India suffered unusually low winter temperatures, which killed more than 100 people. A mere six months later, a heat wave killed almost 330 in the same region.

Box 7: The environment needs rescuing

'Twenty or thirty years ago, we could understand from the water temperature and the wind direction if the flood was going to come... Before, it was mostly monsoon flooding in July or August, but now the rains are continuing into October', says Laila Begum, who lives in the char (islands of silt) area of Bangladesh and has been forced to move 25 times in her lifetime. 'That causes problems, because it is the times when we should be planting our crops... There are more storms, more thunder and lightning.'



Fig. 17: A home in Shariatpur, Bangladesh, surrounded by floodwater. When the 1998 flood was at its full height, a few days before, this land was completely submerged

Source : Shafiq Alam/Oxfam/Bangladesh/1998

Laila and her family have had to develop survival strategies to cope repeatedly with change. Oxfam's partner NGO has helped to increase their resilience to cope with frequent floods by raising their homesteads, campaigning for public health care, and providing emergency storage, rescue boats, mobile phones, and radios for early warning. These initiatives are crucially important, but they need to be replicated on a massive scale to protect the millions who continue to suffer.

Laila says, 'If this (place) erodes, we will move to another and begin again. We are not afraid; we are used to it, moving. We have developed survival strategies... but (it) definitely increases our suffering.' As the weather becomes increasingly unpredictable, it threatens her community's security, their livelihoods, and even their lives.

Governments alone can stem this crisis. Environmental degradation needs to be kept in check both nationally and internationally. As climate change is the result of many years of emissions of greenhouse gases into the atmosphere, developed nations must fulfil their responsibility not only to mitigate a future catastrophe, but also to provide funds to low-income countries like Bangladesh to adopt local survival strategies en masse.

Within the country, too, it is imperative that the government play a positive role to ensure that the natural habitat is preserved against degradation. Mangroves, in particular, which provide a natural protective barrier against cyclones and have been decimated in the last decade, need to be regenerated urgently.

(Source: Shailan Parker, Bangladesh, Oxfam.)

The associated costs of climate change threaten to jeopardise South Asia's growth. By 2010, the cost of climate change in India is estimated to result in a 9-13 per cent loss of GDP. Across South Asia during this period, it is also estimated that an extra 165,000 child deaths may occur every year owing to increased hazards⁵.

This chapter explores how shifts in the climate are driving and exacerbating environmental changes, and increasing the threat of natural calamities.

More disasters, worse disasters

Greater intensity

“ *Ahasa numba ketharam raludeyi denune maha wesi avamai*
Polowa numba ketharam raludeyi denune niyagaya avamai
Sayura numba ketharam raludeyi denune maha rala avamai
(Sky, I didn't know how strong you are until you poured heavy rains
Earth, I didn't know how hard you are until the drought occurred
Ocean, I didn't know how violent you are until huge waves came in)

Sinhala folk song⁶”

South Asia is heavily at risk. A rise of more than 2°C will increase coastal flooding in Bangladesh, with the attendant risk that salt water will infiltrate drinking water. Mumbai, Kolkata, Karachi, Chittagong, Colombo, and other coastal cities will be endangered⁷. It is feared that by the turn of the century, the Maldives, with 80 per cent of its islands lying less than one metre above sea level, will be uninhabitable, and 360,000 people will be forced to evacuate.



Fig. 18: Rising danger – 80 per cent of the Maldives lie less than a metre above sea level

Source: Paul Sherlock/Oxfam/ Maldives/2005

The scale, intensity and magnitude of disasters is expected to be unprecedented. In less than 30 years from now, the melting of glaciers in the Hindu Kush and Himalayan regions, which supply up to 85 per cent of dry season water to the rivers in the North Indian Plain⁸, may turn the Ganges, Indus, and Brahmaputra into seasonal rivers - and affect 750 million people. More frequent droughts will affect water availability and crop yields; higher temperatures will bring more heat waves; and warmer oceans will produce more intensive storms.

The destruction of livelihoods would exacerbate chronic poverty in the region⁹. In India, due to over-exploitation, groundwater tables are already falling rapidly and a rise of more than 2°C could reduce yields of wheat and rice by 10 per cent¹⁰. Bangladesh is expected to lose one tenth of its rice production and one third of its wheat production over the next 50 years. With droughts entrenched as a regular and lingering phenomenon, grave food insecurity seems imminent¹¹. 'Climate migrants' already account for at least one third of the impoverished people who are flooding from rural areas to seek work in the city of Dhaka¹².

Harder to predict

Climatic events are already becoming far more unpredictable, bringing more natural disasters in their wake.

In July 2006, after eight years of drought in the Sindh province of Pakistan, the rains in Tharpakar district were 4.5 times higher than the average in the previous 30 years. The unseasonal rains killed hundreds of people and destroying crops, roads and houses.

Similarly, in central India from 1951 to 2000 'extreme monsoon rainfall events' became more common, but the 'moderate rainfall events' declined, increasing the risk of rainstorms and floods¹³. A similar

pattern has been seen in Sri Lanka, where despite the decrease in annual rainfall in recent years, floods, storm surges, and landslides have increased as a result of short periods of intense rainfall¹⁴. In 2006, the dry desert regions of Rajasthan were inundated with rain¹⁵, while wet Assam in the north-east witnessed drought.

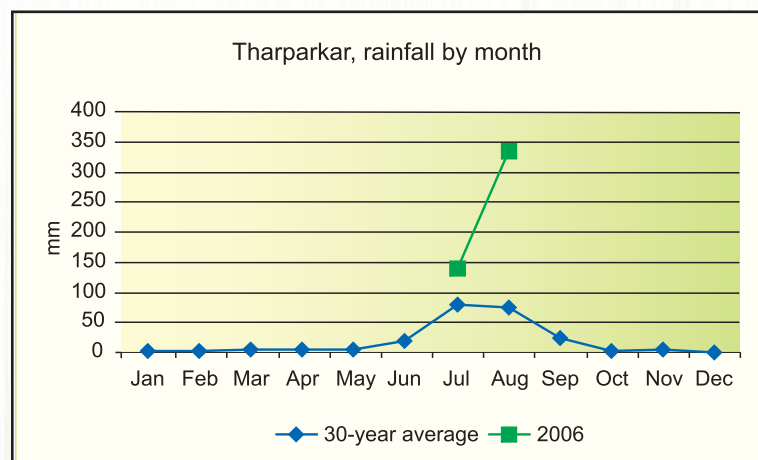


Fig. 19: Unusual rainfall in Tharparkar, Sindh

Source: Helen Berton/2006/Oxfam/Pakistan Flood in Sindh Province: Findings of Rapid Assessment October 2006, Islamabad: Oxfam

Poor are the hardest hit

The poorest people are the hardest hit by any environmental crisis, because of their direct dependence on natural resources¹⁶. According to the Intergovernmental Panel on Climate Change (IPCC), farming and fishing communities in developing countries will suffer some of the worst impacts of climate change, including more frequent droughts and floods, more crop damage and falling yields, water shortages, and more disease.

Almost one eighth of the world's population already lives in the areas affected by flooding across the Gangetic plain.



Fig. 20: Village task force rescues people and livestock from flooded areas in Nepal.

Source: Oxfam/Nepal/2007

Developing countries of South Asia also face disproportionate risks. Although Nepal is responsible for only about 0.025 per cent of annual global emissions of greenhouse gases, it is among the countries at the highest risk of negative impacts of climate change.

Countries like Bhutan and Nepal with 80 per cent of their population, infrastructure, and agricultural land concentrated in precarious mountain valleys, are highly vulnerable to the danger of outburst floods from glacier lakes.

Vulnerability reduction is clearly even more urgently need than before. Warmer oceans are predicted to cause rising sea levels to rise further, which could devastate much of Bangladesh and make at least 50 million people homeless.

Degrading the environment

South Asia's approach to economic development has allowed environmental destruction that has increased the risk of natural disasters. However, ecosystems play a crucial role in not only sustaining human development but also providing the resources that enable communities to adapt to climate change.

India's mangrove tree cover has been reduced to less than a third of its original area in the past three decades, especially since the advent of the aquaculture industry. After the tsunami in 2004, it became evident that the clearing of mangroves in Sri Lanka and India for shrimp cultivation or for sea-front hotels had left communities more vulnerable to the power of the waves by removing nature's shock absorbers.



Fig. 21: Destroyed house in Bangladesh 2004 floods

Source: Jane Beesley/Oxfam/Bangladesh/2004

In Nepal, a nation that has felled 60 per cent of its forests in less than half a century, flash floods gush from the mountains unhindered. In Pakistan, extensive deforestation has increased the frequency of landslides¹⁷.

Record rainfall in 2005 and 2007 in the South Asian cities of Mumbai, Karachi, Chittagong, Vadodara, and Hyderabad, linked to climate change effects, was the major proximate reason for unprecedented flash floods. However, the consequences were exacerbated by other factors. Poor maintenance and the blocking of storm-water drainage systems by garbage, plus poor construction of water-storage structures, were partly to blame - but so too was the destruction of mangroves and other natural vegetation¹⁸.

Box 8: Chapattis made from grass

'It is a bad situation here at the moment. For lack of rain, we can't make much from agricultural work, so it is hard to make a living', laments Ghansu, a landless labourer in India's Bundelkhand region. Newspapers report that villagers are eating chapattis made from grass. Debt and five years of crop failure have driven more than 400 farmers to commit suicide in Bundelkhand.

Indiscriminate felling of trees, over-exploitation of groundwater, excessive use of chemical fertilisers, soil erosion, and scanty rainfall contribute to the prevailing drought in Bundelkhand. An elderly farmer Harju concurs: 'Many years ago, when I was a young man, there were a lot more trees here, and we could eat the fruit off the trees. But now the trees are gone, and the prices of vegetables have gone up. It is a change for the worse. In the past, life wasn't as bad as this. The trees were cut down to make houses and for other things. There is no more jungle left any more. It is all gone. Men just cut them down.'

Traditional tanks and ponds have fallen into disrepair or been destroyed. Increased construction of tube wells and hand pumps, and use of water-intensive crops and fertilisers have depleted the groundwater tables. Bus stands and train stations are lined with men migrating in droves in search of work as labourers. Women and children are left behind to cope in whatever way they can.

In Ghansu's village, however, Vikalp, Oxfam's partner NGO, has supported a grassroots movement of fisher folk called Machuara Sangathan. 'Fishing is what keeps us going. Fishing is passed down through generations. Our pond is completely dry now, so we can't fish at all. We are growing wheat at the bottom of our dry pond now, but even this is not enough to get us through. Because there has been no rain here this year, some of us will have to go out of the village to find work. There are normally about five to six people in a family, so the way that we work is normally to split the workload. Two of us fish, two of us do the agriculture, and the other two family members go away to work as labourers to earn money to send back home. People go to Delhi, Mumbai, or Jhansi to work, and the Punjab, far away. This is how we are coping with the drought.'

Eight of the 13 districts in Bundelkhand are covered by the National Rural Employment Guarantee Act (NREGA) 2005, with its provisions for reviving traditional water-harvesting structures, conserving water, renovating water bodies, and drought proofing. But about 30 per cent of the project's funds have been devoted to road construction! Parmarth's study of traditional water resources noted that Jalaun's water problems can be solved if only 3 per cent of the district's rainwater-harvesting potential is tapped. NREGA provides a means of undertaking these works to avoid droughts in the future.

(Sources: Interviews by Lucy Davies, 2006, Oxfam GB, India; Arundhati Dhuru, 2003, *Tragedy of the Commons*, Lucknow: Oxfam India, Das, 2007; 'Central India in grip of worst ever drought', *Features, Down to Earth*, Vol 16, No 2, 15 June 2007; Jane Beesley/Bangladesh/Oxfam/India)

Fragile habitats

“*'As I wake up, the first thing I worry about is getting water. I have to fetch water from other streets, as the water tap in my street has dried up.'*

*Mohammad Zafar, 1983
Tench Bhatta, low-income neighbourhood, Rawalpindi¹⁹*”

Nineteen per cent of the world's population lives on 'fragile lands'²⁰ - arid zones, slopes, wetlands, and forests that cannot sustain them. The peril lies in the fact that rural population growth rates are higher in countries where 30 per cent or more of the population lives on these fragile lands. Most of these populations in fragile habitats are concentrated in South Asia²¹.

Although floods are not a new phenomenon, erratic weather patterns increasingly wreak havoc. In 2007 the early arrival of the rains, their severity, and the continuous three-week downpour caused widespread misery in Bangladesh. In Lahore, unplanned encroachment of natural water exit-points leads to flooding in the vulnerable katchi abadis (slums or shanty towns) after only one or two days of rainfall²².

Conclusion : no time to delay

The warning signs are clear. The threat to poor people's lives and livelihoods from disasters in South Asia, already severe, is growing. Climate change makes action even more urgent. It requires that the world moves now to slow down global warming whilst simultaneously equipping poor people to cope with the changes that are already happening. Time is precious. Governments must act - fast.

At the UN conference on climate in Bali, Indonesia in December 2007, rich countries agreed to set up a fund to help developing countries adapt to the burgeoning cost of climate change. However, with estimated costs exceeding \$50 billion annually, those rich countries have to start delivering serious sums money soon for those pledges to be meaningful before the potential costs soar further.

BUILDING A BETTER FUTURE: DISASTER RISK REDUCTION

“*We have the technology to prevent much of the destruction that now follows most natural hazards, but to do this requires development: stronger housing, better agriculture, a more diversified economy, and more responsive governments.*”

Frederick Cuny
Disasters and Development, 1964

Natural hazards are deadly across South Asia and becoming increasingly violent and unpredictable. But effective disaster risk reduction programmes help people to survive.

Japan is an excellent example of how this approach pays dividends. The Japanese archipelago is located in one of the most geologically unstable regions on the planet and regularly experiences earthquakes, typhoons, floods, landslides and volcanoes - but it has consistently invested in reducing their negative impacts. As a result daily life is rarely affected.

In South Asia, the case of Bangladesh perhaps best illustrates the difference that disaster preparedness can make. The country has long been prone to major weather-related hazards such as tropical cyclones, which ravage poor communities inhabiting flimsy homes and leave a trail of carnage and destruction in their wake. However, a study of the last three biggest cyclones over the past 40 years reveals an instructive trend.

| Cyclone | Year | Number of people killed |
|---------|------|-------------------------|
| Bhola | 1970 | 500,000 |
| Gorky | 1991 | 138,000 |
| Sidr | 2007 | About 4,000 |

Although Bangladesh's population has more than doubled since 1970, the number of deaths from the biggest cyclones (of roughly equal ferocity) has plummeted. Why? Since 1970, aid agencies, government officials and local communities have been working together to reduce the impact of natural disasters.

Scores of communities have devised their own disaster mitigation plans. Early warning systems have put in place to inform vulnerable towns and villages of approaching cyclones. More than 2,000 cyclone shelters have been constructed.

It is widely believed that the early warning systems and cyclone shelters saved tens of thousands of lives when Cyclone Sidr struck last November. As Sidr approached, it is estimated that 3.2 million people were evacuated from the coastal areas and that over two million people were already in special shelters when the cyclone hit.

"I can imagine that this cyclone would have killed over 100,000 in the early 90s", says Kamal Akbar, director of RDRS, a Bangladeshi NGO. Cyclone Sidr is believed to have killed up to 10,000. However, although the shelters saved thousands of lives, the cyclone still caused widespread destruction to livelihoods and assets - underlining the need for comprehensive disaster mitigation measures that protected these things too.

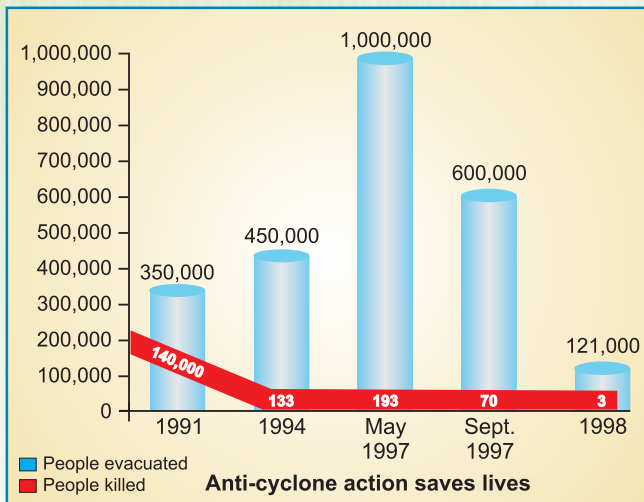


Fig. 22: Cyclone preparedness through timely evacuation has saved millions of lives and reduced the number of people killed in Bangladesh in the nineties

Source: IFRC, 2002, *World Disaster Report 2002: Focusing on Reducing Risk*, Geneva: International Federation of Red Cross and Red Crescent Societies

Resilience to natural hazards can be achieved relatively cheaply and need not be the preserve of rich countries. Preparedness costs little - a fraction of post-disaster response. In the Dhemaji district of Assam, Oxfam's partner Rural Volunteers Centre has demonstrated that community-based disaster-preparedness cost a mere two per cent of projected post-flood relief².

What is more, good disaster preparedness can put communities on the path to self-reliance. Oxfam helped the village of Amirpur Kanaka in the district of Muzaffargarh, Pakistan, to prepare for flooding. In 2006, despite the same level of flood as previous years, villagers turned down offers of external relief and instead offered to help other villages to develop ways of coping.

However, governments have a duty to uphold the rights of all peoples to equitable development including protection from disasters. Investment in disaster-resilient infrastructure is crucial.



Fig. 23: Dalimon Begum adding more mud to the foundations to raise her homestead which protected her from the floods in 2007

Source: Jane Beesley/India/Oxfam GB/2007

Box 9: Shelter from the storm

Because Saleha Begum had a raised homestead, she could offer shelter to her daughter and family when they had to leave their home because of the flooding in July 2007.

Saleha Begum, who faces regular floods, offers this advice to development planners: "Don't give cows to people who face regular floods. Where would the cows go when the floods came? Their homesteads need to be raised - that's the first thing that should be done. Then when they are safe you can develop other things. Because our homesteads have been raised our lives are better than they were - so do this with more people."

In India, the government programme Indira Awas Yojana (IAY), specifically targeted to construct houses for families below the poverty line, offers the ideal opportunity to raise homes in flood-prone areas of the Ganga-Brahmaputra-Megha river basins.

At a meagre cost of \$70 per mud house, Oxfam has raised the plinths of 600 houses in flood-prone areas in West Bengal to demonstrate the potential of the IAY to incorporate disaster-resilient features. Now the onus of implementation lies with the government.

(Source: Jane Beesley, Oxfam, Bangladesh and Grace Kutty Middey, Oxfam, India)

Disaster risk reduction in practice

The examples of best practice for disaster risk reduction given in this report are drawn largely from Oxfam's experience over the past decade in South Asia. These micro-initiatives have had substantial impact in improving lives of the poorest and most marginalised people. So far they have only been able to target a small minority of the millions who are routinely affected by disasters. However, we hope they can act as examples for governments and others of what can and should be done across South Asia.

This chapter evaluates the four aspects of successful disaster risk reduction policies:

(A) **social:** moving from reaction to preparedness; (B) **physical:** building sound structures; (C) **economic:** tackling poverty and hunger; (D) **political:** protecting human rights in - and beyond - crises.

A. Social - from reaction to preparedness

“ ‘Every night I go to bed, I keep a whistle and a flashlight by my pillow.’

Teruko Nagaoka, 75
Kobe, Japan³

”

The huge suffering inflicted by disasters in South Asia can be significantly reduced with the right measures. However, physical or economic solutions aren't enough in themselves. An Oxfam partner from Pakistan⁴ lamented that an often-heard reaction to the introduction of flood early warning systems in some villages is: '*Aap ko kya pata? Khuda ki marzi*' - 'What do you know? It is God's wish'.

In other cases - such as the one given earlier of Amirpur Kanaka village in Muzaffargarh district, Pakistan - local communities are much more aware of how to reduce risk and prepare effectively. This section explores how to help move from reaction to preparedness.

Box 10: Learning from traditional practices

Ten thousand people died in the Andaman Islands in the 2004 tsunami, but the Onges tribes who have inhabited the island for 30,000-50,000 years remained unscathed by moving to higher ground. The Jarawas not only survived the tsunami but have adapted to it by retreating from the beaches to the jungles to hunt and eat wild boar instead of turtles (their usual preference).

It was the traditional folk tales of the Onges that prepared them to move to higher ground deep inside their forest when the waves entered their settlements. The Jarawas, on identifying the first tsunami wave, were able to distinguish its amplitude and frequency from normal tidal waves and immediately fled to the highlands. This advanced knowledge of the ecosystem is transmitted from generation to generation through oral tradition.

Tribal communities rooted to their natural habitats have consistently shown the richness of their indigenous coping and risk-reduction mechanisms in the face of natural hazards. Across drought-prone areas in India, at each harvest they mix groundnut with pulses and cereals, so that in case of a shortfall of rain, at least some of the seeds will grow. Oxfam encourages learning relevant disaster risk reduction techniques from traditional indigenous practices and adapting them to local contexts.



Fig. 24: Maachas built in West Bengal by local disaster preparedness committees to replicate traditional flood coping methods across the border in Bangladesh

Source: Kate Raworth/Oxfam/India/2004

Help local communities help themselves

“ ‘One neighbour is better than a hundred relatives.’

Afghan proverb⁵

”

The first step towards risk reduction is knowing which hazards pose a threat. These must be analysed and the whole community brought together to understand the risks they face and also their vulnerabilities. Local people are the first responders to any disaster, so disaster risk reduction programmes must work to strengthen self-reliance and resilience.

Before the 2007 floods across northern India, Oxfam partners had encouraged community-based disaster committees to produce hazard and vulnerability maps, including evacuation plans. These saved many lives, homes and livelihood assets.



Fig. 25: A Pakistani Christian, Martha, has finally found acceptance and respect in the eyes of her Muslim neighbours in Chak 6/4-L, a flood prone village in the Muzaffargarh district of southern Punjab, because of her life-saving first aid training

Source: India/Oxfam2005



Fig. 26: Swimming simulation exercises in flood prone areas

Source: India/Oxfam/2004

Oxfam's disaster-preparedness committees and village development councils in Andhra Pradesh, India, organised groups of 15 families to select representatives for committees to oversee savings, income generation, health, insurance, housing, and disaster-preparedness. The committees in turn select representatives to the village development council, who co-ordinate efforts based on a comprehensive area-development approach. Across South Asia, Oxfam programmes support similar models of disaster-preparedness, with an eye to integrating development initiatives at every level.

These programmes do more than just prepare people for disasters. They can also address long-standing discrimination and vulnerability. In Andhra Pradesh Oxfam's disaster-preparedness initiatives have largely targeted support for dalit communities and indirectly contributed to their empowerment⁶. In Pakistan, a simple first-aid training course has resulted in greater empowerment of members of religious minorities.

Everyone has their part to play. Children need to be trained to deal with disasters, ideally whilst they are in school, as already happens in Cuba. In Andhra Pradesh, Oxfam has designed a special 'snakes and ladders' game to teach children the correct escape route in the event of a disaster. Using the life skills and wisdom of the elderly is often invaluable. For example, retired servicemen have first-aid skills which can be used when disaster strikes.

Community solidarity is an under-appreciated disaster-protection measure. Building the resilience of local communities also ensures that they are not reduced to passive victims of disasters.

Box 11: Development in their own hands

In April 2007, flash floods and mud-slides caused by heavy rains and snowmelts affected large areas of northern Afghanistan, causing much death and devastation. This is a disaster which strikes the region often. But in 2007 the village of Dari-Souf Payan in Samangan suffered only a single casualty and limited damage to property.

The fruits of community disaster-preparedness are now evident. The seeds had been sown less than six months earlier. In January 2007, BRAC (Bangladesh Rural Advancement Committee) had initiated a community-based disaster-risk reduction programme (CBDRR) in the village, supported by Oxfam. BRAC has trained 30 local facilitators, 20 women and 10 men, to work with groups of 50 families each. They have established Village Disaster Management Units, with separate committees for the women and the men, in keeping with cultural norms and to ensure that women's concerns are voiced.

When the heavy rains started in April committee members went to each house to discuss the impending floods and the need to move to higher ground. After the floods, with BRAC's support, the committee mobilised the community to dig out the water channels to enable life to return to normal as soon as possible.

The CBDRR interventions encourage communities to learn to work as a group, to empower themselves to solve their own problems. An extra benefit of the programme has been the empowerment of women in the village. Only 17 per cent of women in the area are literate and there is a traditional reluctance to allow women to participate actively in public life, which initially made it difficult to identify female community facilitators. BRAC used religious examples to encourage elders to support women's participation in the committees and allowed women to bring families and chaperones with them to training sessions and meetings. These women, having redefined their traditional roles, have now decided to send their female children to the village school.

(Source: Lisa Reilly, Oxfam Novib, Afghanistan)

Ring warning bells

“*We tried to do what we could. We don't have contacts in our address book for anybody in that part (South Asia) of the world.*”

Charles McCreery,
Director, National Oceanic and Atmospheric Administration, Honolulu”

Early warning of a looming hazard is often all that is required to save thousands of lives.

When early warning systems fail, the results can be catastrophic, as happened during the 2004 tsunami. A warning centre in Hawaii told the American naval base in Diego Garcia (in the Indian Ocean) about the impending tsunami two hours before anyone else knew, but the information was not communicated to the other areas under threat⁸ even by telephone⁹.

This example illustrates the importance of effective early warnings of disasters. Information must be timely and easily understood. In West Bengal, the Oxfam River Basin Programme has worked with the meteorological department to ensure that the warning messages and evacuation procedures are easily understood and without technical jargon.

In Bangladesh, Oxfam has helped families to purchase cheap \$12 radios to monitor weather forecasts. Local community leaders are the next stage in spreading the message successfully. The local Imam in Sariatpur village proudly proclaims, *'When I hear the news on the radio, I go straight to the mosque and make an announcement over the microphone. Everyone can hear the news at the same time and can put the agreed preparedness plan into action.'*



Fig. 27: Local imam with radio in Sariatpur, Bangladesh. "When I hear the news on the radio I go straight to the mosque and make an announcement over the microphone. Everyone can hear the news at the same time and can put the agreed preparedness plan into action."

Source: Jane Beesley/Oxfam/Bangladesh2004

Mass media can help bring change

The mass media usually focus on the lives lost in a disaster. Highlighting what went wrong is a crucial part of the media's role as watch-dogs; but they have an equally important role to play in showing where and how lives have been saved through preparedness. As well as being popular and eye-catching, such stories can keep up the pressure on governments to invest in simple, cost-effective and secure ways to deal with disasters.

There is also a fundamental inequity in news coverage, which needs to be reversed. In 2007, even after three weeks of floods in remote parts of Bihar and Terai in India and Nepal respectively, the disaster barely reached the front pages of national newspapers. In contrast, a single day of floods in urban areas like Mumbai, Dhaka (and even Gloucester, England) earned endless hours of coverage as "breaking news" on South Asian news channels. News reports should provide equitable coverage of disasters and include positive, instructive stories of preparedness.

In Andhra Pradesh, Oxfam has worked with the local vernacular newspapers Eenadu and Andhra Jyoti to improve the quality of reporting by "stringers". These local correspondents can prove to be invaluable sources of information, even for the government, on the scale of the impact of disasters.

B. Physical - build sound structures and protect the natural environment

Poor quality buildings cause many deaths when disasters strike. Weak buildings collapse during earthquakes. Cyclones don't blow away concrete roofs, but they devastate basic thatched coverings.

Box 12: Proactive reporting

Duryog Nirvaran has emerged as a leading South Asian network of individuals and organisations committed to promoting an alternative perspective on disasters and vulnerability as the basis for disaster mitigation. The publication *Disaster Communication: A Resource Kit for Media* provides a range of guidelines to redefine disaster reporting. The phases of coverage, as depicted in Oxfam programme and advocacy work published in mainstream media outlets, are as follows:

1. 'Normal times': When there is apparent calm, media can play a key role in encouraging disaster risk reduction initiatives, discussing policy issues which could aggravate disasters, give substantiated warnings of disasters 'waiting to happen', and advocating legislation for long-term disaster planning.
2. Pre-disaster: Disseminate early warnings and communicate weather forecasts to communities at risk. Pre-disaster education and awareness can make a significant difference.
3. Post-disaster (Relief): Disaster control, information dissemination to assist relief and recovery. Focus on indicators of accessibility, equity, efficiency, quality, transparency, and accountability. The media can play a particularly important role in monitoring the implementation of the Humanitarian Charter and Minimum Standards in Disaster Response (commonly known as the Sphere Project).
4. Post-mortem (long-term): The most crucial process is to ensure that the lessons from the disaster are learned and disseminated, especially when media attention has declined. Follow-up stories in the affected areas are crucial to ensure successful rehabilitation.

Oxfam's partner Journalist Resource Centre in Pakistan has played an admirable role by conducting workshops with local media on the importance of reversing the emphasis of headline news. The momentum generated by these sessions has been so palpable that reporters and editors have taken an interest in supporting a string of news items about preventive action.

(Source: Bhatti and Ariyabandu, 2002, *Disaster Communication: A Resource Kit for Media*, Duryog Nirvaran)

For poor people, a safe disaster-resilient house is more than a shelter. It reduces their risk of plunging into a vicious spiral of poverty when natural hazards strike. It saves lives and protects assets from damage. Since their homes commonly double as bases for their livelihoods - selling groceries, cutting hair etc - strong homes enable people to resume earning incomes and recover from a disaster more quickly.

Strengthening physical infrastructure is a vital part of disaster-risk reduction and preparedness. Everyone involved in creating buildings - architects, engineers, urban planners, masons, and carpenters - should ensure they can withstand the onslaught of disasters. Mega-cities like Los Angeles and Tokyo, despite being acutely prone to earthquakes, can protect 60-storey skyscrapers by demanding strict adherence to rigorous construction rules. (Since the 1950s, Japan has consistently spent around one per cent of its annual budget on disaster counter-measures¹⁰.)

This holds true in South Asia too. During the 2001 Bhuj earthquake in India, most government buildings that conformed to construction codes suffered only limited damage, while schools and hospitals that did not follow the codes collapsed¹¹.

Investment should also be directed to improving the resilience of existing buildings, which is cost-effective and imperative. Post-earthquake, the government of Pakistan plans to retrofit all risk-prone schools¹². In India, Oxfam has helped families in Andhra Pradesh to retrofit their houses at low cost with cement beams to make them cyclone-resistant¹³.



Fig. 28: A traditional house with reinforced cement concrete (RCC) column and corner strengthening

Source: Oxfam/India/2004

Box 13: Handloom workers weave their homes for resilience

The handloom weavers in Andhra Pradesh who used to live in Amalapuram were one of the worst-affected groups during the cyclone of 1996. Most of them are dalits, the lowest layer of the Hindu caste hierarchy, and they have been oppressed and excluded for generations.

After the cyclone Oxfam's partner NGO SAKTI devised a unique scheme to rehabilitate 100 families and retrofit the buildings using low cost cement beams. Sathyanarayana Vasa, a weaver in Pulletikurru, is now the proud owner of a house with a thatch roof anchored by G-wire. He said their earlier houses of mud, brick and log had to be mended each year.

"That used to be a recurring expense," he said. "The whole family would stop weaving for at least for a fortnight, which meant a loss of income as well. We now save this income - for a family like ours that means a great deal."

Nowadays all they need is the thatch for the walls, which they can weave from the leaves that fall off the palms on the seafront. That costs nothing. 'These are cheap and safe cyclone-resistant houses,' says Satyanarayana, the NGO field officer. 'These houses have been surviving gale-force winds in every cyclone season; we are sure they will not be blown away, even by a cyclone of the kind that destroyed us in 1996.'

(Source: Nupur Kukrety and N.Hari Krishna, Oxfam, Hyderabad, India)

Think local, act local

Infrastructure must be built to withstand local conditions and hazards, and a careful analysis of the risks is vital before construction starts. For example, in sandy areas experiencing cyclones, buildings need to be built with deeper foundations¹⁴.

Indigenous knowledge attuned to local contexts often can sometimes offer effective solutions. In India, traditional houses of wood and stone survived the Uttarkashi earthquake in 2000, while modern buildings collapsed¹⁵. Similarly, during the Kutch earthquake, Bhunga circular houses with thatched roofs suffered from minimal damage. In the flood-prone north eastern parts of India, houses are traditionally constructed on bamboo stilts to allow flood waters to flow under them.

Using locally available materials when building safe homes ensures sustainability. Oxfam and the Indian Institute of Science have developed a manually operated machine called Mardini that produces disaster-resistant brick blocks¹⁶ 25 per cent below market prices, and with energy efficiency 70 per cent higher than those made by brick kilns¹⁷.

Protect natural habitats

Physical infrastructure includes the natural world, which can help protect people in the event of disasters. This is particularly relevant in South Asia where four-fifths of South Asia's rural poor, more than half the region's population, depend on the natural environment to meet most of their needs¹⁸. These 'ecosystem people' grow their own food and gather wood or dung for cooking food and building their huts.

Their natural ecosystem can also save their lives when disaster strikes. The Maldives islands suffered less from the 2004 tsunami than mainland India, because their up-market tourism industry had not exploited the virgin mangroves and coral reefs surrounding the coastline¹⁹. Coral reefs act as a natural breakwater, and mangroves are a



Fig. 29: The house of Waseer in Dachod Faqera, Jhelum valley. The ruins of this house are a good example of what traditional houses at this elevation look like - with stone and mud walls, wooden portals and lintels (still standing and the safest place to be if an earthquake occurs). The wooden ceiling is still intact but the family was unable to survive the falling walls.

Source: Lucy Davies/Pakistan/Oxfam GB/2007

natural shock-absorber²⁰. Sri Lanka, on the other hand, paid the price for its depleted protective layer²¹.

Trees can be the best shock absorbers. To protect communities from potential future hazards, in Sri Lanka Oxfam partner Wetlands International/ IUCN has undertaken coastal replanting on beaches to prevent sand mining²², and mangrove replanting to support small-scale fishing and prawn farming²³.

Communities actively take initiatives to protect the natural environment when they see such measures directly benefiting their livelihoods. In the Sindh province of Pakistan, sharecroppers have planted *poplar* and *eucalyptus* to stem the chronic water logging and salinisation of their agricultural lands²⁴.

C. Economic change - tackling poverty and hunger

As explained earlier, much the scale of a disaster is determined by people's underlying vulnerability. If people have no access to savings, or only one way to make a living, or are already suffering from hunger or poor health, they will be much more vulnerable when disaster strikes. In the Bangladesh famine of 1974, for example, rural labourers experienced an intensity of destitution almost three times greater than farmers, because they did not have land of their own and in the crisis were unable to find employment²⁵.



Fig. 31: Depleting stocks of sheep being grazed by shepherd, Kalua, in area surrounding Madia village in Tikamgarh

Source: Rajendra Shaw/Oxfam/India/2007

An important part of increasing resilience to disaster is to provide effective financial safety nets for the very poorest. The range of safety nets could include as appropriate: unconditional cash grants; conditional cash grants, requiring (for example) that children attend school; cash-for-work schemes; and social insurance programmes that can provide relatively more affluent households with an assured minimum income in case of a shock.

While NGOs have experimented with these policies as both humanitarian or development interventions on a small scale in a limited geographic area, governments need to provide leadership, as the guarantors of rights, by providing funds through the national budgets.

Prevent a fall into destitution

After a disaster, one of the key challenges faced by survivors is the risk of destitution. Traditionally governments and NGOs have responded with food rather than cash, but the benefits of the latter are now increasingly recognised. Understanding the context is key.

In the 1998 Bangladesh flood, when rice prices rose by 50 per cent as a result of supply problems, Oxfam learned that food aid might be more appropriate than cash when markets are closed or not functioning normally. However, in other contexts cash transfers are more effective. They can help to meet food²⁶ and non-food needs, and also provide the "multiplier effect" to regenerate the local economy, which helps to maintain people's dignity by giving them choice and flexibility. In Pakistan, in the aftermath of the 2005 earthquake, Oxfam provided cash grants to shopkeepers²⁷ in Balakot to restart their local grocery businesses, which had collapsed by 70-80 per cent²⁸.

Governments often announce compensation packages after a disaster for the families of the dead and injured. After the 2005 earthquake hit Pakistan and the 2004 tsunami struck Sri Lanka and India, governments provided



Fig. 30: Casuarina trees planted by Oxfam partners across the Andhra Pradesh coast act as a first defence, withstanding hurricanes and gales.

Source: Oxfam/India/2004

cash grants, albeit often inadequate, to help people to reconstruct their houses with disaster-resilient features. Unconditional cash grants, however minimal, also proved to be invaluable for the purchase of household consumption needs in the aftermath of the 2007 Bihar floods.

The lesson from these experiences is that a contextualised response to disasters that helps people restore their livelihoods and incomes quickly is the best way to avoid deepening vulnerabilities and thus increasing the risk of future disasters.

Box 14: Do cash transfers promote social ills and gender inequity?

A concern often raised about cash transfers is that they can promote social ills (such as increased alcohol or drug consumption) and gender inequality (with women excluded from decisions on how money is spent). But an Oxfam/WFP joint evaluation of tsunami relief in Sri Lanka showed that in that specific case at least the fears were unfounded.

At the project planning stage, there had been reservations that a complete substitution of cash for food would have a negative impact on household food-security and decision-making. It was feared that the male member of the household would control the cash entitlement alone, without involving their female counterpart, and would be more likely to spend the money on alcohol.

The evaluation showed, however, that the level of joint decision-making between husbands and wives was slightly higher in cash-receiving households compared to food-receiving households. Alcohol consumption, too, although it increased marginally in both household types over the implementation period, actually increased less for cash households.

Source: Oxfam/WFP joint evaluation of tsunami relief in Sri Lanka

Pre-disaster strategies to reduce risk and vulnerability are equally important to prevent destitution. Slow-onset phenomena like droughts or water logging are generally characterised by bureaucratic delays in the official declaration of a disaster²⁹, and during this crucial period permanent safety nets can prevent the plunge to destitution. In the chronically drought-prone Indian state of Rajasthan, public distribution system (PDS) Fair Price Shops which constitute 76 per cent of all food-grain retail outlets are permanent anti-famine measures³⁰.

The 2007 floods, however, in contrast exposed the failure of governments to integrate their considerable resources with the objective of greater disaster-preparedness. The lack of contingency stocks of food grains in several government warehouses and village panchayat stores in areas cut off from means of transport and communication caused acute distress.

The benefits of public works

“*I'm very hopeful about my future and I'm confident that I'll continue to produce salt in the coming years. The best part of Oxfam's intervention is that you not only gave us money, you motivated us to get back to work when we never thought we would come back.*”

Naharathinam, a salt-pan leaseholder, describing Oxfam's cash-for-work programme after the tsunami in South India³¹”



Fig. 32: Women working on a cash-for-work scheme funded by Oxfam and run by partner Sarvodaya to improve roads in areas affected by the tsunami

Source: Howard Davies/Sri Lanka/Oxfam/2005

Public works as a safety net are well suited to restore the entitlements of those who can work. They can perform a dual role by creating infrastructure which increases resilience against disasters. For example, in Hazarajat province in Afghanistan, Oxfam has supported the construction of traditional water reservoirs to collect snowmelts, spring water, and rainfall for irrigation.

Seasonal crises can be more easily overcome by falling back on permanent safety nets. In northern Bangladesh, a famine-like situation *monga*, occurs each year between October and November before the

Box 15: India's National Rural Employment Guarantee Act and disaster risk reduction

In recent decades, the poorest districts in India have been in a chronic disaster-like situation. To provide a permanent safety net for the poor, the National Rural Employment Guarantee Act (NREGA 2004) was enacted after sustained pressure by civil society to protect the right to work. The permanent safety net for poor people is expected to cost only 1 per cent of India's gross domestic product. The Act provides only the minimum wages and therefore proves to be a self-targeting mechanism for poverty alleviation: only people in acute distress will undertake tiring manual labour. Rural public works schemes in South Asia, in parts of Africa, and in Latin America have repeatedly proved to be effective to reach the able-bodied rural poor in times of need. The striking feature is the flexibility of such schemes to expand and contract in scale according to unpredictable agricultural seasons. In 1987, severe monsoon failures led to record attendances at Maharashtra work sites, and the employment provided was clearly instrumental in avoiding food-entitlement collapses and subsequent famine.

The National Rural Employment Guarantee Act also has the potential for direct investment in disaster-risk reduction. The approved works include water harvesting, drought proofing (including afforestation), construction of irrigation canals for poor and marginalised communities, renovation of traditional water bodies, desilting of tanks, land development, drainage in water-logged areas, rural connectivity, and wasteland development. The Act also makes it possible to expand the types of work in the immediate aftermath of a disaster to include clearing of debris and simple repair of the infrastructure, using labour-based methods.

Source: Jane Beesley/Bangladesh/Oxfam/India

annual harvest. Oxfam partner organisations, therefore, regularly initiate cash-for-work schemes for poor landless labourers and marginal farmers, who because of severe unemployment often go for days without food.

To ensure that women are not excluded, in the Daikundi province of Afghanistan Oxfam specially designed a culturally appropriate project focused on embroidery. Similarly, in south India after the tsunami, Oxfam ensured that women formed 60 per cent of the workers on salt-pan reclamation schemes, earning the same wages as men³². To ensure the sustainability of such initiatives, Oxfam partner Dhanak Rural Development Organisation (DRDO) in Pakistan not only took the effort to provide employment to women after the earthquake but also ensured that this improved their access to markets regularly with contracts to tailor local school uniforms³³.



Fig. 33: Women's embroidery cash-for-work project in Daikundi

Source: Oxfam/Afghanistan/2006

Insure vulnerable communities

Poor people often use loans as a de facto insurance policy. Credit pays for basic consumption or production needs after a disaster. But credit can also be lethal. Getting into debt can increase the vulnerability and impoverishment of the poor after a disaster.

“Poverty in the sense of low income can be reduced by borrowing or investing, but such debts make households more vulnerable. Poor people with the horror of debt appear more aware than professionals of the tradeoff between poverty and vulnerability.

Robert Chambers, 1989³⁴”

Micro-credit offers an option of accessing formal credit at relatively low rates of interest. In Andhra Pradesh and Bangladesh, Oxfam has supported the creation of self-help groups to encourage savings and revolve credit, with a clear focus on building resilience to disasters. Natural hazards, however, threaten not only the assets purchased with previous loans but the very survival of borrowers. Grameen Bank has reported that the 1998 floods affected 1.2 million of its 2.3 million members³⁵.

Insurance can replace credit to cushion the impact of disasters. However, insurance largely remains a buffer only for the relatively wealthy. Private firms shy away from rural markets with apparent high levels of risk. People living in poverty consider insurance to be a luxury, especially if they are unlikely to make or receive a claim. Micro-insurance, however, does offer the possibility of providing households with access to liquidity for reconstruction, especially after small or localised disasters which are unlikely to attract assistance from the government or humanitarian aid agencies³⁶.

Oxfam has demonstrated that insurance can be a viable option for disaster risk reduction for communities that normally live above the poverty line. In coastal Andhra Pradesh, households have been provided with coverage against natural disasters for US\$ 500 by the public-sector Oriental Insurance Company. Oxfam pays half the premium (a minuscule \$ 2 per person), and each household pays the remainder. More importantly, village youth have been trained as disaster-management volunteers to sell customised policies and process claims³⁷. Within two years, sixty insurance claims were processed, increasing the confidence of the insured.

Secure livelihoods

Strategies to protect livelihoods have to be carefully tailored to individual regions and their specific problems. One size does not fit all.

Indiscriminate livestock restocking in a drought to restore livelihoods may prove to be counter-productive. Rearing animals requires the purchase of fodder, which increases vulnerability. Recently in drought-prone areas in India, big animals like cattle have been replaced by small goats or sheep which can survive on thorny plants and less water, and are easier to transport for distress sales³⁸.

Rain-fed agriculture and fisheries are the most vulnerable to droughts and floods and require investment in the development of resilient strategies.

Diversification of livelihood options (being able to make a living from more than one type of work) is a tried and tested coping mechanism. Seed fairs are a technique to provide farmers with greater access to seed, to replace their failed crop with alternative varieties which have better local survival rates³⁹.

Informal occupations can provide alternative livelihoods for poor people without assets or jobs. In Sri Lanka after the tsunami, Oxfam partners provided women with training and funds to restart small businesses like tailoring, animal husbandry, selling fish or produce, brick-making and recycling garbage.



Fig. 34: Oxfam cash-for-work in Hanumanvadh village in Gujarat building bunds and de-silting and digging ponds on agricultural land in an area affected by chronic drought and earthquake in 2001

Source: Shailan Parker/India/Oxfam/2002

D. Political - protecting human rights in a crisis and beyond

“*The Sarpanch just helps himself, but won't help low-caste people like us.*”

*Nagji Bhai, 2002,
salt-pan worker affected by the earthquake,
cyclone, and drought in Gujarat in the past 10 years*”

Disasters make pre-existing inequities worse. Because Nagji Bhai belongs to a marginalised community of low-caste salt-pan workers he faces acute vulnerability and persistent discrimination. This has made it much more difficult for him to recover from the natural disasters he's suffered. If people like Nagji Bhai are not to be left reeling from disasters, governments need to take action to reduce underlying vulnerability, by combating South Asia's huge inequalities in incomes, power and access to support.

Provide essential services

Promoting social and economic equity is key to successful long-term strategies to reduce people's vulnerability to disasters. A society in which everyone had access to good health care, education and electricity supply is far more resilient to natural disasters.

Essential services, provided as basic human rights, are necessary investments for effective risk reduction⁴⁰. They have been pledged by governments in national legislation and in the global agreements including the Hyogo Framework for Action and in the Millennium Development Goals (MDGs).

Government provision of basic services - health care, family planning, sanitation, education, and livestock treatment - in the regularly flooded char and hoar areas of Bangladesh, has therefore been the main advocacy focus of the Oxfam's River Basin Programme there. After all, in the words of one village woman, *'The worst thing about char life is women dying in childbirth because they cannot get medical attention during floods'*⁴¹.



Fig. 35: Mohamed Hilmi, Oxfam Public Health Engineer, helps to construct an Oxfam T11 water tank in 'CTB camp', Kinniya, Trincomalee District, eastern Sri Lanka after the tsunami

Source: Tori Ray/Oxfam/Sri Lanka/2005

Right to information

Information about approaching natural disasters is not enough on its own. There need to be coherent, straight forward early warning messages if lives are to be saved.

For example, public warnings were broadcast more than 50 hours before the Ersama super-cyclone hit the coast of Orissa in 1999. The messages even reached remote villages via battery-operated radios and TVs. But the weather warning service put the onus on people to make their own decisions, rather than providing emergency-evacuation instructions. Ninety per cent of the 50,000 people who died in the super-cyclone would be alive today if only they had taken refuge inland⁴².

Drawing lessons from the Orissa debacle, Oxfam has been working with the meteorological department in East India to ensure that early warning messages are comprehensive.

Deficient communications within and between borders also often prove to be disastrous. Lack of adequate flood-warning of the release of water from dams, which could have prepared communities for early evacuation, causes unfettered devastation⁴³. Oxfam partners complain that flood warnings on radio or television can often be as esoteric as *'100,000 cusecs of water is released from the dam...'* without specifying the extent of danger it poses or the areas under risk or the evacuation procedures for the vulnerable⁴⁴.

In the aftermath of a disaster, informed citizens alone can hold their governments to account. After the 2004 tsunami, Oxfam set up information centres with the Disaster Relief Monitoring Unit (DRMU) of the Human Rights Commission of Sri Lanka, to enable people to demand their rightful compensation packages, voice their grievances, and be actively involved in the rehabilitation process. Oxfam has also worked with its partner the Consortium of Humanitarian Agencies (CHA) and the Institute of Human Rights to set up free legal-aid clinics.

After the recent floods in Bihar, concerned NGOs with the state relief and rehabilitation machinery set up 'Dalit Watch Centres' to ensure equity and inclusion in humanitarian aid⁴⁵. The Right to Information Act 2005 in India, in particular, holds substantial potential to detect corruption in humanitarian interventions.

Use disasters to achieve reform

Because disasters expose development failures, they can provide an incentive for governments to act. After the earthquakes in Gujarat in 2001 and in Pakistan in 2005, public anger at the widespread collapse of school buildings led to calls for better enforcement of legislation on building codes, and promises of action by governments⁴⁶. It is important for citizens to follow up with governments on the implementation of such commitments.

Box 16: Paradigm shifting - slowly

In the world's most disaster-affected region, concern to prepare for disasters has been historically low. But it has picked up pace only the past two decades. This shift was particularly influenced by the growing international awareness of the merits of disaster-risk reduction. Unfortunately, the greatest impetus to bringing disaster management to the forefront of international attention has been the large number of disasters which have struck South Asia in the recent past - especially the Asian Tsunami in 2004.

The most pertinent policy response in the international sphere has been the adoption of the Hyogo Framework of Action 2005-2015 at a world conference on disaster risk, held in January 2005 to overcome the limitation of the earlier Yokohama Strategy. The Hyogo Priorities for Action are as follows:

- Ensure that disaster risk reduction is a national and a local priority, with a strong institutional basis for implementation.
- Identify, assess, and monitor disaster risks and enhance early warning systems.
- Use knowledge, innovation, and education to build a culture of safety and resilience at all levels.
- Reduce the underlying risk factors.
- Strengthen disaster-preparedness for effective response at all levels.

The importance of these initiatives is that they set standards for implementation, but governments and the international community must ensure that the rhetoric is translated into reality, in letter and in spirit, and that theoretical initiatives - like the establishment of institutions and innumerable 'lessons learned' workshops - are translated into tangible processes of community empowerment

(Source: Anu Kapoor, 2005, 'Insensitive India: attitudes towards disaster prevention and management', *Economic and Political Weekly*, 15 October, p. 2551-60.)

Such catastrophes provide a trigger to invest in disaster risk reduction, leading to a redesign of national legislation and institutions. Sri Lanka and Pakistan have created national government bodies to co-ordinate disaster management.

These institutional and legal mechanisms illustrate a trend towards empowering local governments, although there is much room for improvement in their implementation. Detecting this opportunity, the SUNGI Foundation, an Oxfam partner in Pakistan, regularly conducts '*kehuli kacheri*' (participatory community forums) at the union council and sub-district level to address issues of disaster resilience⁴⁷. Drawing on the government of Pakistan's devolution plan in 2001, Oxfam has also encouraged community-based organisations to register themselves as Community Citizen Boards (CCBs), which entitles them to apply for local union council development funds for 80 per cent of the cost of projects for disaster risk reduction.

RECOMMENDATIONS

South Asia has witnessed too many natural hazards become full-scale disasters in the past decade. Every disaster erodes the foundations of the region's development and leaves a trail of lost or damaged lives and weakened communities.

Yet, the damage wrought by disasters in South Asia, though often described as if it was inevitable, can in fact be greatly reduced. Advocates of sustainable development quote the formula: *risk of disaster = hazard × vulnerability*. It recognises that reduction of both hazard and vulnerability reduces risk and saves lives and livelihoods. And it shows that the extent of damage wrought by 'natural' disasters is not an immutable consequence of 'nature' but is something that we can change.

To do so, governments and donors need to acknowledge and act on the three key messages of this report. Firstly, that the impact of disasters is not socially neutral but is conditioned by underlying people's vulnerability - so tackling inequality is key to reducing vulnerability. Secondly, that disaster risk reduction works, and that effective approaches have been demonstrated and can be replicated. And thirdly, that climate change demands action - which was always important - now even more urgent. It requires that the world moves now to slow down global warming whilst simultaneously equipping poor people to cope with the changes that are already happening.

All of us have a role to play. As individuals, we can each try to reduce our 'carbon footprint', and support community projects which help people prepare for disasters. Companies can help by adopting climate-friendly internal and external organisational policies and operational practices. They can also actively study how they can help support disaster risk reduction: mobile phone companies, for example, should collaborate with governments across the region to issue early warning messages. Governments, as the protectors of human rights and freedoms, bear the primary responsibility for reducing the risk of disasters - saving and protecting lives.

A holistic approach to disaster risk reduction, integrated with vulnerability reduction in all spheres - physical, economic, social and political - is imperative. But communities themselves, as the first and last responders to any disaster, need to be empowered.

Disasters do not respect the political boundaries of nation states. Regional co-operation is essential. The establishment of the SAARC Disaster Management Centre (DMC), in line with the commitment to regional co-operation declared at the 13th SAARC summit, was an important step forwards, as were the establishment at previous summits of a Meteorological Research Centre and a Coastal Zone Management Centre. But the real test lies in the ability of regional authorities to make effective use of these institutions to share cross-border data and support effective initiatives for disaster risk reduction.

Rich countries, too, need to play their part - both as 'good donors' and as those who have been most responsible for, and most able to do something about, climate change.

South Asian governments need to:

- Reduce underlying vulnerabilities by tackling malnutrition, expanding and improving public education, health, water and sanitation systems, and combating discrimination against women, ethnic and religious minorities, and "lower" caste people
- Invest in and integrate disaster risk reduction principles in all development planning in accordance with the Hyogo Framework. These include effective research, monitoring and analysis, promoting risk reduction awareness, sharing relevant information, developing early warning systems, enforcing appropriate building codes, protecting natural environments, creating social and financial safety nets, conducting preparedness drills and taking into account the effects climate change
- Support community-level preparedness by ensuring that appropriate emergency supplies are available, thus helping well-prepared communities to act as the first line of defence
- Work with NGOs to help prepare communities for disasters and to strengthen monitoring processes - while accepting that governments, as the guardians of human rights and freedoms, bear the primary responsibility for reducing the risk of disasters, saving and protecting lives.
- Cooperate with each other in sharing immediate data with all the region's disaster management agencies, while working through the regional organisation SAARC to promote South Asian approaches to disaster risk reduction
- Work for an effective and equitable international agreement to tackle climate change. With rich country support, South Asian countries can do this by adjusting their development planning appropriately to minimise environmental harm

Rich country governments need to:

- Provide at least 0.7 per cent of their GNI in international aid, of which disaster risk reduction - based on Hyogo Framework principles - is a key component. Development assistance should also address underlying risks by expanding and improving public education, health, water and sanitation systems, as well as tackling discrimination against women, minorities, and "lower" caste people
- Support NGOs in their disaster preparation activities and assist South Asian governments to expand successful local disaster management approaches nationally
- Ensure that emergency responses integrate key disaster risk reduction principles
- Help achieve an effective and equitable international climate change agreement. They can do this by significantly reducing their greenhouse gas pollution (in order to restrict global warming to less than two degrees Celsius above pre-industrial levels) and by providing additional financial support above existing aid levels to help South Asian countries meet the costs of adapting to climate change

The greatest obstacle to progress on all these steps is not an absence of workable solutions - examples of best practice, both local and large-scale, have been set out in this report. Nor is it a problem of resources. Effective preventative action, after all, is vastly less expensive than recovery and rehabilitation. Moreover, if national governments and donors meet their pledged commitments and work together effectively, the resources are there. The greatest obstacle is the lack of energetic political will. This report aims to help build that will.

In the final section of this report are "country checklists" for each of the countries of South Asia, with some specific recommendations for action that can be taken now by each of the countries of South Asia, that governments can use to check their own progress, and citizens can use to hold governments to account.

Action can save and transform lives. Inaction would be literally fatal.

Action check list - Afghanistan

- Fulfil the Afghan Compact commitment to implement an effective system of disaster preparedness and response by 2010.
- Ensure that all the line ministries of the National Commission for Disaster Management finalise and implement disaster preparedness plans, as required by the 2003 National Disaster Management Policy and Plan for Disaster Management.
- Prepare, monitor, and evaluate disaster management plans at provincial, district, and community levels.
- Build the capacities of the zonal sub-offices of the Afghanistan National Disaster Management Authority.
- Build the capacities of Community Development Councils (CDCs) in the National Solidarity Programme (NSP) in disaster risk reduction, in addition to on-going support for flood-prone districts.
- The Ministry of Education should include disaster preparedness in school curricula.
- Allocate a certain portion of emergency funds from the national budget managed by the Ministry of Rehabilitation and Reconstruction (MRRD) and DDP for disaster preparedness activities.
- Monitor the performance of the ministries that have allocated some part of their annual budget for emergency preparedness and response.
- Enact the environment law pending in parliament that requires the mass media to devote at least five per cent of airtime to environment protection issues and disaster preparedness.
- The Ministry of Urban Development should strictly enforce building codes.
- Extend the coverage of the National Emergency Employment Programme Labour Intensive Public Works Programme (LIPW) as a permanent mechanism for social protection.
- Respond to the Famine Early Warning System Network (FEWSNET) danger signals on climate changes and predicted hazards, based on the monitoring of satellite images.

Action check list - Bangladesh

- Invest in infrastructure for flood and cyclone shelters, raise tube wells, and install other adaptation measures across the flood-prone areas of the country, integrated with long-term development works.
- Effectively implement the Bangladesh Disaster Management Regulative Framework.
- Initiate measures for cyclone-preparedness, and ensure that the shelters are appropriate to community needs.
- Improve early warning systems to ensure that warnings reach the most remote areas and especially women.
- Provide basic services of free education and health care, and safe drinking water and hygienic sanitation in the remote char areas.
- Enact the draft National Policy on Disaster Management.
- Only construct embankments where they are appropriate and where local communities support their construction. Ensure adequate maintenance of existing embankments.
- Formulate a National Building Code.
- Ensure that funds for social-security programmes are distributed on the basis of human development and poverty criteria.
- Reactivate local disaster management committees, most of which are considered to be dysfunctional.
- Actively encourage the recognition of inputs from communities and civil society in the development on the Flood Action Plan.
- Model the impacts of climate change and devise a 15-year strategy with community involvement to determine the roadmap for change.
- Undertake a national mangroves-regeneration project.

Action check list - Bhutan

- Monitor dangerous glaciers and glacial lakes and link with communication channels 24 hours a day.
- Put into practice the 2006 National Disaster Risk Management Framework and implement the provisions of the Disaster Risk Management Act.
- Integrate the process of planning for disaster risk reduction in all developmental initiatives across line ministries.
- Provide up-to-date information to local residents about dangerous glaciers and safe places for evacuation.
- Determine the corpus for the National Disaster Mitigation and Preparedness Budget, based on a bottom-up approach of understanding community needs.

Action check list - India

- Amend the National Disaster Management Act 2005 to acknowledge and integrate the role of NGOs in disaster response and risk reduction.
- Develop strong institutional links between development and disaster management bodies (e.g. District Planning Committees and District Disaster Management Agencies) to ensure disaster risk reduction (DRR) plans are integrated into development projects.
- Form partnerships with the corporate sector to raise DRR awareness and help protect economic investments while optimising the sector's logistical and technological capabilities.
- Regulate the private sector use of natural resources and adherence to master plan regulations through compulsory environmental impact assessments.
- Prevent environmental degradation by introducing controls to regulate mining on slopes and to ban the building of dams on seismic fault lines.
- Strictly enforce the adherence to building codes and by-laws in all cities.
- Improve the performance and coverage of social safety nets such as the public distribution system to support the poor, enhancing their resilience to shocks and seasonal hazards.
- Encourage the private insurance sector to provide low-cost rural coverage options.
- Enforce payment of pensions to vulnerable groups such as widows, elderly people, pregnant women, disabled persons, etc.
- Effectively implement the National Rural Employment Guarantee Act (NREGA) and payment of unemployment insurance across the 300 poorest districts of the country.
- Investigate the projected scenarios for the impact of climate change across the country and invest in adaption measures accordingly.
- Replicate community-based DRR initiatives piloted by different NGOs and UN agencies on a large scale by building capacity and supporting government officials to create decentralised micro-planning at village, block, and district level.
- Introduce a uniform Relief Code across the country and ensure that communities are aware of these codes and their rights.
- Make emergency contingency stocks available at local levels, placing essential items including search and rescue items in locations prone to being cut off after flooding etc.
- Provide adequate resources to local level Gram Panchayat and PRI functionaries to carry out disaster management programmes.

Action check list - Maldives

- Given the experience of the tsunami and the fact that the highest elevation is 1.5 metres above sea level across islands, mainstream disaster risk reduction in all aspects of development planning across line ministries.
- Implement a disaster risk reduction framework derived from the Hyogo priorities.
- Model the impacts of climate change and mitigation measures.
- Ensure community involvement in the implementation of the national early warning system.
- Collaborate with the Ministry of Education to ensure that disaster risk management elements are incorporated in the school curriculum.

Action check list - Nepal

- Replace the Natural Calamities Relief Act 1982 with the model Disaster Management Act produced by the Nepal Centre for Disaster Management and Oxfam.
- Develop clear cut policies to improve the whole disaster management process: reforming institutions and official agencies, as well as defining the roles of NGOs, local communities and the private sector in disaster risk reduction.
- Devise and implement disaster contingency plans at both central and local levels in consultation with relevant stakeholders.
- Increase co-ordination between the Ministry of Housing, Physical Planning and Works, the Ministry of Local Development, and the Ministry of Home Affairs with regards to their respective disaster preparation, mitigation and response activities.
- The Ministry of Housing, Physical Planning and Works should ensure that local authorities carry out their responsibilities to enforce seismically resistant building codes.
- Increase the seismic resistance of all schools, many of which collapsed in the great Bihar-Nepal earthquake of 1934 and the Udayapur earthquake of 1988.
- Support local authorities to devise and implement disaster management plans across all districts.
- Implement public education to support basic services of sanitation, health care and clean water with a risk reduction perspective.
- Ensure that the eleventh Five Year Plan elaborates on strategies for disaster risk reduction.
- Research and deploy flood-resistant technology to combat new hazards in the Terai region.
- Link existing communication systems such as FM stations, telephone landlines and mobile phone services to use them strategically to issue flood warnings.
- The Department of Hydrology and Meteorology (DHM) should invest in collating real time data from stations on a 24-hour basis to support flood forecasting.
- Adopt a multi-hazard approach with specific attention to droughts, whose impacts are often more enduring than those of floods.

Action check list - Pakistan

- The National Disaster Management Authority (NDMA) should implement all the components of the National Disaster Risk Management Framework, especially the formation and devolution of resources to the Provincial Disaster Management Authorities (PDMAs) and District Disaster Management Authorities (DDMAs).
- Government should ensure effective integration of disaster risk reduction (DRR) principles into sustainable development policies, and planning and programming at all levels (e.g. the five years development plan), with a special emphasis on disaster prevention, mitigation, preparedness, and vulnerability reduction.

- A national hazard and vulnerability mapping exercise should be conducted by the NDMA in collaboration with all relevant stakeholders.
- Implement the Local Government Ordinance to empower government agencies: for example, the Tehsil Municipal Administration should incorporate disaster management in overall development planning, including local town planning.
- Support civil society participation in the implementation of the National Disaster Management Framework (NDMF), to ensure that community needs are well reflected in local disaster management plans.
- Encourage the women who hold the 33 per cent of reserved seats in the legislative councils at the district, tehsil, and union council levels to take leadership in disaster-risk reduction initiatives.
- Ensure the implementation of district disaster management plans and decentralised contingency plans including emergency preparedness.
- Invest in community infrastructure, including raised homesteads, flood shelters, and water and sanitation facilities, especially in flood-affected areas.
- Invest in a comprehensive drought mitigation strategy including effective drought early warning mechanisms (both at community and district level) to ensure timely dissemination of information by the government.
- Integrate DRR in training programmes for civil servants, as part of the core curricula.
- Train teachers and incorporate disaster risk reduction in the school syllabus.
- Include DRR as a separate cost component in the national budget.
- Ensure that budgets allocated to the provinces and subsequently to districts include dedicated resources for DRR principles in the development plans at all levels.
- Encourage oil and gas companies operating in disaster-prone areas in Sindh to fulfill their corporate social responsibility by contributing five per cent of their profits to local district governments to support essential services and risk reduction investments.
- Conduct environmental impact studies and vulnerability and risk assessment for large scale infrastructural projects, emphasising their impact on communities threatened by natural disasters.
- Recognise land erosion as a key cause of the vulnerability of communities living along the Indus river system and develop adequate compensation policies.

Action check list - Sri Lanka

- Implement a multi-hazard pilot model in one district, and encourage the Disaster Management Centre (DMC) to replicate it elsewhere.
- Reduce the number of ministries in charge of disaster management - apart from the clearly delineated roles of the DMC and National Disaster Management Centre (NDMC).
- Create public awareness of the role of the Disaster Relief Monitoring Unit (DRMU) of the Human Rights Commission in facilitating redress and compensation for grievances.
- Create a policy on rural water supply and sanitation.
- Incorporate a Disaster Risk Assessment into all environment impact assessments, to ensure allocation of funds for mitigation works in new projects.
- Ensure that mock drills are regularly conducted, to ensure that the warning messages issued by the Indian Ocean tsunami-warning system are comprehensible and that they reach communities at risk, together with evacuation plans.
- The Ministry of Disaster Management and Human Rights should collaborate with the Ministry of Education as agreed to incorporate robust education about human rights and disaster management in the school curricula.

- Allocate adequate funds for disaster management as a line item in the national budget, ensuring allocation of funds by government agencies.
- Ban sand mining, which increases floods and sea-water intrusion; replace it with mangrove plantations.

Action check list - SAARC (South Asian Association for Regional Cooperation)

- Implement specific environmental projects, utilising at least 15 per cent of the SAARC Development Fund (SDF) for disaster risk reduction, to meet the targets of the Hyogo Framework, the SAARC Development Goals, and the Millennium Development Goals.
- Disseminate information to coastal communities from the newly established Indian Ocean Tsunami Early Warning and Mitigation system.
- Implement an action plan for sharing cross-border information to facilitate flood forecasting up to one month in advance in the Hindu Kush Himalayan Region, especially in the Ganga-Brahmaputra-Meghna Basin.
- Reach an agreement to provide real-time data to all disaster management agencies that are involved in the issue of disaster-warning messages in the region.

Endnotes

1. PAYING THE PRICE FOR POOR POLICIES

- ¹ Jamil Khan (2007) '800 houses collapse in Gadap, 22 perish', *Daily Times*, June 25.
- ² 71 women died, compared with only 15 men, per 10,000 dead. World Disaster Report, 2006, *Focus on Neglected Crisis*, Geneva: International Federation of Red Cross and Red Crescent Societies.
- ³ UNDP 2004, *Development At Risk*, Chapter 1, 'Reducing disaster risk: a challenge for development', New York: UNDP.
- ⁴ Anu Kapur (2005) 'Insensitive India: attitudes towards disaster prevention and management', *Economic and Political Weekly*, 15 October 2005.
- ⁵ *Ibid.*
- ⁶ Oxfam (2005) 'Targeting Poor People: Rebuilding Lives After the Tsunami', 25 June 2005, Oxfam Briefing Note, Oxfam International.
- ⁷ *Ibid.*
- ⁸ The SSNPs include old-age allowance, allowances for widowed, deserted, and destitute women, honoraria for insolvent freedom fighters, programme for the assistance of the fully retarded, mitigating natural-disaster risks, rehabilitation of acid victims and physically handicapped, fund for seasonal unemployment reduction, primary-education stipend programmes, funds for vulnerable group development (VGD) and vulnerable group feeding (VGF) programmes, test relief and gratuitous relief, among others.
- ⁹ Oxfam International (2005) 'The Tsunami Impact on Women', Oxfam International, March 2005.
- ¹⁰ Estimate of Oxfam partner Surya Women's Development quoted in Oxfam International, 2005, 'The Tsunami Impact on Women', Oxfam International, March 2005.
- ¹¹ Azra Talat Sayeed (2005) 'The Pakistan earthquake's impact on women', *Forum News*, Asia Pacific Forum on Women, Law and Development, Volume 18 No. 3 September - December 2005.
- ¹² Anu Kapur (2005), *op.cit.*
- ¹³ 'The proportion of deaths amongst women as a function of age and ability to swim'. Guha-Sapir *et al.* (2006), *Risk Factors for Mortality and Injury: Post-tsunami Epidemiological Findings from Tamil Nadu*. Centre for Research on the Epidemiology of Disasters (CRED) School of Public Health, Catholic University of Louvain.
- ¹⁴ Kerbart Sivakumar (2004) 'Drought, sustenance and livelihoods: 'Akal' survey in Rajasthan', *Economic and Political Weekly*, January 17, 2004.
- ¹⁵ Alice Fothergill, 1998. The neglect of gender in disaster work: an overview of the literature.
- ¹⁶ Timothy Gill (2007) 'Making Things Worse: How Caste Blindness in Indian Post-Tsunami Disaster Recovery has Exacerbated Vulnerability and Exclusion', Dalit Network Netherlands and CORDAID. HRW (2005), 'After the Deluge: India's Reconstruction Following the 2004 Tsunami', HRW, May 2005, <http://www.countercurrents.org/dalit-gatade240906.htm>
- ¹⁷ Gustavo Capdevila (2006) 'HUMAN RIGHTS: No Multi-Ethnic Balance in Sri Lanka, Says Expert', IPS.
- ¹⁸ Human Rights Watch (2001) 'Caste Discrimination: A Global Concern', A Report by Human Rights Watch for the United Nations World Conference Against Racism, Racial Discrimination, Xenophobia and Related Intolerance. Durban, South Africa, September 2001.
- ¹⁹ S. Gatade (2006) 'Past As Living Present: Calamity And Discrimination', countercurrents.org, September 24 <http://www.countercurrents.org/dalit-gatade240906.htm>
- ²⁰ Nawa Fariba (2006) 'How the West short-changed Afghanistan', Times Online, 29 October 2006.
- ²¹ Video, Center for Handloom Information and Policy Advocacy.
- ²² Memon and Babbar (2007) 'Cost of Tampering with Nature: Flood Disaster in Sindh and Balochistan – A Rapid Technical Assessment', presented at the OGB partners workshop in September 2007.
- ²³ Lisa Reilly, Oxfam Novib, Pakistan and Afghanistan; and speech by Andrew Natsios at www.cgdev.org/doc/event%20docs/12.9.05_Food_Aid_food%20aid%20transcript.pdf
- ²⁴ This section draws heavily on Anu Kapoor, *op. cit.*
- ²⁵ Francesca Lyman (1990) *The Greenhouse Trap*, Beacon Press.
- ²⁶ Dixit Ajaya (2003) 'Rivers of collective belonging', Essay, *Himal South Asian*, October.

2. ARRESTED DEVELOPMENT: THE COST OF INACTION

- ¹ Ravindranath (2007), Correspondence with author on 12 February 2007.
- ² Zaman (1989), quoted in Sarkar, Haque and Alam, 2003, 'Rivers, chars and char dwellers of Bangladesh', *Intl. Journal of River Basin Management* Vol. 1, No. 1 (2003), pp. 61-80.
- ³ C del Ninno, P. Dorosh, L. Smith, and D. Roy, 2001, *The 1998 Floods in Bangladesh: Disaster Impacts, Household Coping Strategies, and Response*, Research project 112, International Food Policy Research Institute
- ⁴ Oxfam International (2005) 'Targeting Poor People: Rebuilding Lives After the Tsunami', Oxfam Briefing Note.
- ⁵ Sarkar, Haque and Alam, 2003, 'Rivers, chars and char dwellers of Bangladesh', *Intl. J. River Basin Management* Vol. 1, No. 1 (2003), pp. 61-80.
- ⁶ National Risk and Vulnerability Analysis, World Bank (2005), *Afghanistan: Poverty, Vulnerability and Social Protection: An Initial Assessment*, Human Development Unit, South Asia Region. The NRVA surveyed 11,200 households in almost all the districts in the country.
- ⁷ 'Flood in Sindh Province: Findings of Rapid Assessment October 2006', Islamabad: Oxfam.
- ⁸ CED is defined as a 'steady state', where an individual is in energy balance, i.e. the energy intake equals the energy expenditure, despite the low body weight and low body-energy stores. Thus, by never growing to a normal size or having experienced one or more stages of energy deficiency, the individual has arrived at a reduced body weight with possibly limited physical activity, which has allowed the energy demands of a lower basal metabolic rate (BMR) and reduced amounts of activity to balance the lower intake.
- ⁹ 'Multi Sector Damage Assessment Report: Gujarat Floods 2005', Oxfam, CARE, CRS, Action Aid, 29 July 2005.
- ¹⁰ J Haldikar, 2007, The rising import of 'suicides', <http://www.indiatogether.org/2006/jun/opi-cotton.htm>
- ¹¹ Kathmandu Valley Earthquake Risk Management Project (KVERMP) by National Society for Earthquake Technology
- ¹² Sahgal Bittu, 2005, *You Are Guilty*, HumanScape, September
- ¹³ ActionAid (2006), *Disaster Risk Reduction: Implementing the Hyogo Framework for Action*, Briefing Paper, January
- ¹⁴ Drury and Olson, 1998, *Disasters and Political Unrest: An Empirical Investigation*, *Journal of Contingencies and Crisis Management*, 1998, vol. 6, pp. 153-161

3. CLIMATE CHANGE AND ENVIRONMENTAL CHALLENGES

- ¹ Sahba Chauhan, Oxfam, India, 2006. Already, in the past decade, weather-related natural hazards have been the cause of 90 per cent of natural disasters, 60 per cent of related deaths, and 98 per cent of the impacts on disaster-affected populations, the majority in developing countries (International Federation of Red Cross and Red Crescent Societies (2005) World Disasters Report 2005: *Focus on Information in Disasters*, IFRC, Geneva, quoted in Helmer and Hilhorst, 2006, 'Natural disasters and climate change', *Disasters*, 2006, 30 (1): 1"4).
- ² Raymond Hainey, 2006, *The Scotsman*, 'Climate change: The crack of doom?', 30 December 2006.
Based on a six-year study by a team of researchers led by Dr Sugata Hazra, Director of Jadavpur University's School of Oceanographic Studies. So remote is the island that the researchers first learned of its submergence, and that of an uninhabited neighbouring island, Suparibhanga, when they saw that they had vanished from satellite pictures. Two-thirds of nearby populated island Ghoramara has also been permanently inundated.
- ³ Dissanaik Tharuka, 2006, In the Wake of Disaster, Report, Himal South Asian, November, Volume 20, No. 9
- ⁴ Shahrbanou Tadjbakhsh, 2004, National Human Development Report for Afghanistan, 2004 Security With a Human Face: Challenges and Opportunities, Kabul: United Nations Development Programme
- ⁵ Stern, N., S. Peters, V. Bakhshi, A. Bowen, C. Cameron, S. Catovsky, D. Crane, S. Cruickshank, S. Dietz, N. Edmonson, S. L. Garbett, L. Hamid, G. Hoffman, D. Ingram, B. Jones, N. Patmore, H. Radcliffe, R. Sathiyarajah, M. Stock, C. Taylor, T. Vernon, H. Wanjie, and D. Zenghelis (2006), Stern Review: The Economics of Climate Change, HM Treasury, London.
- ⁶ Narrated by Nanditha Hetriani, Oxfam America, Sri Lanka.
- ⁷ Raj Chengappa, 2007, 'Apocalypse now: the latest UN Panel Report on Climate Change forecast that India would be among the countries worst affected by rising temperatures, what we can do about it', *India Today*, 23 April 2007
- ⁸ A. Challinor, J. Slingo, A. Turner, and T. Wheeler (2006) 'Indian Monsoon: Contribution to the Stern Review', University of Reading.
- ⁹ Thapaliya Bhimsen, 2007, Climate Change: Asia is More Vulnerable, Gorkhapatra, April 27
- ¹⁰ The UK's Department for International Development (2004)
- ¹¹ UNEP, 2007, Millions at Risk of Hunger and Water Stress in Asia Unless Global Greenhouse Emissions Cut: Asian Governments Need to Mainstream 'Climate Proofing' into National Development Strategies, News Release, April
- ¹² IRIN, 2007, Global: Drowning in urban disaster, IRIN, 18 September
- ¹³ F. Harvey, 2006, 'Cold comfort as globe warms', *Financial Times*, March 2007.
- ¹⁴ Dissanaik Tharuka, 2007, Potholes on Galle Road and climate change: Urban planning has to take into account the latest threat of human habitation – unpredictable weather caused by a warmed climate', Green page, Environment, *Daily Mirror*, 25 May.
- ¹⁵ Jain (2006) 'When the desert floods', States, *Business India*, September 24.
- ¹⁶ Oxfam, 1991, 'Oxfam and the Environment', Oxford: Oxfam Public Affairs Unit.
- ¹⁷ Kate Simpson, Oxfam GB, Pakistan
- ¹⁸ Multi Sector Damage Assessment Report: Gujarat Floods 2005', Oxfam, CARE, CRS, Action Aid, 29 July
- ¹⁹ 2006, Drought threatens Pakistan; reservoirs run low, Reuters, May 8
- ²⁰ One quarter of people in developing countries (1.3 billion), including many of those in extreme poverty, live in zones with fragile ecosystems, including forests, arid regions, mountains, and wetlands. Fragile lands are defined as areas sensitive to land-use patterns, particularly vulnerable to degradation, erosion, floods, and landslides. World Bank, 2003, World Development Report 2003: Sustainable Development in a Dynamic World, Washington: World Bank
- ²¹ World Bank, 2006, World Development Indicators 2006, Washington: World Bank
- ²² Oxfam Project Plan PKNB14, internal document, PIP P00197.

4. BUILDING A BETTER FUTURE: DISASTER RISK REDUCTION

- ¹ World Conference on Disaster Reduction, 18-22 January 2005, Kobe, Hyogo, Japan <http://www.unisdr.org/wcdr/preparatory-process/why-wcdr.htm>
- ² Interview with Ravindranath, Director of Rural Volunteers Centre in Assam, 12 February 2007, Kolkata.
- ³ 'The Lessons from Kobe', Asia-Pacific Perspectives, Japan Plus, Volume 2, No.12, April 2005
- ⁴ Narrated by Lala Neel Amber Dhanani, Thardeep Rural Development Programme
- ⁵ Dr Waqfi, Afghanistan, Oxfam Novib partner.
- ⁶ Oxfam GB (2001) 'Creating a Culture of Disaster-preparedness: A Monograph of Experiences of Oxfam GB in Building a Culture of Disaster-preparedness in Andhra Pradesh'.
- ⁷ Tim Reid (2001), *ibid*.
- ⁸ Richard Norton-Taylor (2005) 'US island base given warning: Bulletins sent to Diego Garcia "could have saved lives"', *Guardian*, January 7.
- ⁹ Shanthi Subramaniam (2004) 'The tsunami - 100,000 dead - how no one decided to take any action while watching the killer wave travel for two hours and smash South Asia', *India Daily*, December 29. <http://www.indiadaily.com/editorial/12-30a-04.asp>
- ¹⁰ World Conference on Disaster Reduction, 18-22 January 2005, Kobe, Hyogo, Japan <http://www.unisdr.org/wcdr/preparatory-process/why-wcdr.htm>
- ¹¹ Vatsa Krishna (2002) 'Reducing earthquake loss: towards a national perspective', *Economic and Political Weekly*, April 20.
- ¹² Government of Pakistan (2006) 'Build Back Better: Reconstruction and rehabilitation Strategy', *Earthquake Rehabilitation and Reconstruction Authority*, 20 April 2006.
- ¹³ Oxfam GB (2001) 'Creating a Culture of Disaster-preparedness: A Monograph of Experiences of Oxfam GB in Building a Culture of Disaster-preparedness in Andhra Pradesh'.
- ¹⁴ V. R. Raghavan (2007), Project Coordinator, Andhra Pradesh, OGB, correspondence with author.
- ¹⁵ Videh Upadhyay (2005) 'Disaster management: Putting people first', April 6 <http://www.indiatogether.org/2005/apr/vup-disaster.htm>
- ¹⁶ The blocks are used to make reinforced cement concrete doors and window frames, pre-fabricated roofing systems, ferro-cement roofing channels, segment blocks, and water tanks.
- ¹⁷ PTI (1999) 'Low-cost, eco-friendly technology for housing', *The Tribune*, Monday September 27.
- ¹⁸ The figure for South Asia has been extrapolated from estimates for India derived from Gadgil and Guha's *Ecology and Equity: The Use and Abuse of Nature in Contemporary India*, Penguin Books (1997).
- ¹⁹ AFP (2005) 'Tsunami calamity highlights key protective role of coral, mangroves', *Asia Pacific News*, Channel News Asia, January 6.
- ²⁰ Simon Cripps, Director, World Wildlife Fund quoted in Owen J (2005), 'Tsunami Clouds Future of Marine Animals', *National Geographic News*, January 17
- ²¹ Ecologists tell us that mangroves provide double protection: the first layer of red mangroves with their flexible branches and tangled roots hanging in the coastal waters absorbs the first shock-waves. The second layer of tall black mangroves then operates like a wall, withstanding much of the sea's force. Mangroves help to protect offshore coral reefs by filtering out the silt flowing seawards from the land. Coral reefs absorb the sea's force by breaking the waves. United States Geological Survey (2005) 'Mangrove Forest Distributions and Dynamics (1975-2005) in the Tsunami-impacted Region of Asia'
- ²² February 2007, Field notes in Ampara district, Rixit Bode, Oxfam Novib, Sri Lanka.
- ²³ May 2006, Field Notes in Hambantota district, Rixit Bode, Oxfam Novib, Sri Lanka.
- ²⁴ M. Semple (1994) 'Irrigation and salinity of soils in Pakistan', *Exchanging Livelihoods*, July 1994.
- ²⁵ Francesca Lyman (1990), *The Greenhouse Trap*, Beacon Press.
- ²⁶ The case in favour of cash relief is strong if either food prices in the affected region are below world prices at the border (since recipients will then be able to purchase more food locally with the cash transfer than the humanitarian agency can obtain with the same money on world markets), or if private traders can deliver the food more efficiently than the aid agency. Dreze and Sen argue that higher food prices as a result of cash transfers are fine, provided that they are the result of an effectively targeted cash-transfer policy; those in need will still be better off. Ravallion Martin (1996), 'Famines and Economics', *The World Bank, Policy Research Department, Poverty and Human Resources Division*, December 1996.
- ²⁷ Selection of traders was based on specific criteria for sustainability and in agreement with all the traders of the cluster; allocation of approximately £150 grant was provided to 425 traders in two instalments. 401 traders were able to

restart their business, and the cash grant was used for purchasing stock (60 per cent), repairing the shop (22 per cent) and repaying debt (18 per cent).

- ²⁸ Save the Children assessment quoted in Harvey, 2007, Cash Based Responses in Emergencies, Humanitarian Policy Group, Overseas Development Institute.
- ²⁹ M. Mathai and A. Mahesh (2007) *The Road to Starvation*, <http://indiatogether.org/2003/apr/agr-drought.htm>
- ³⁰ V. Sagar (2003) 'Food Security Issues in a State of Large Agricultural Instability: Rajasthan', IDSJ Working Paper No. 128. Jaipur: Institute of Development Studies in Rathore, M. S. (2005) *State level Analysis of Drought Policies and Impacts in Rajasthan, India, Colombo, Sri Lanka*: IWMI. 40p. (Working paper 93: Drought Series Paper No. 6) <http://www.iwmi.cgiar.org/pubs/working/WOR93.pdf>, Sharma (untitled), 'Agriculture and Food Security', <http://www.infochangeindia.org/AgricultureIbp.jsp#h2>
- ³¹ Salt-pans project in Vedaranyam working with Oxfam (GB) partner FACE. Naharathinam, a leaseholder of the salt-pans, thought he would be unable to restore his salt pans back to normal after the tsunami, until Oxfam introduced the cash-for-work scheme.
- ³² 'Back to Work: How people are recovering their livelihoods 12 months after the tsunami', Oxfam International Briefing Paper (December 2005) http://www.oxfamireland.org/pdfs/bp84_tsunami_livelihoods_final_8.12.05.pdf
- ³³ Interview with Amara Saeed, 2007, Islamabad.
- ³⁴ Quoted in K. Vatsa and F. Ringold, 2000, *Financing Disaster Mitigation for the Poor*, Chapter 12 in A. Kreimer and M. Arnold (Eds) *Managing Disaster Risk in Emerging Economies, Disaster Risk Management, Series. No. 2*, Washington:
- ³⁵ Grameen Bank, 1998, Annual Report <http://www.grameen-info.org/annualreport/annualreport98/flood98.htm>
- ³⁶ 'Disaster Insurance for the Poor: A review of MicroInsurance for Natural Disaster Risk in Developing Countries', 2006.
- ³⁷ Hari Krishna, 'Insurance & Disaster Risk Management: Oxfam Case Study from India'.
- ³⁸ A. Shah (2003), *Sustainable livelihood through Natural Resource Management in Kach - A review*, Care, New Delhi, India
- ³⁹ Sharad Mahajan, Agriculture Scale up Coordinator, Oxfam GB, India.
- ⁴⁰ For more information, refer to Oxfam International, 2006, *Serve the Essentials: What Governments and Donors Must Do to Improve South Asia's Essential Services*, New Delhi: Oxfam International.
- ⁴¹ *Women from char areas 2004*, Sarkar, Haque and Alam, 2003, 'Rivers, chars and char dwellers of Bangladesh', *Intl. J. River Basin Management* Vol. 1, No. 1 (2003), pp. 61-80.
- ⁴² This paragraph draws heavily on 'Deaths Foretold', April 30, 2000. Dash Bishwanath, 2002, *Lessons from Orissa Super Cyclone, Need for Integrated Warning System*, Economic and Political Weekly, EPW Commentary, Economic and Political Weekly, October 19.
- ⁴³ Ibid.
- ⁴⁴ SSUP and SPADE, 'Status Report of Flood Early warning in West Bengal', Sanskriti O Samaj Unnayan Parishad and Calcutta Society for Professional Action in Development, Kolkata: Oxfam GB in India
- ⁴⁵ NCDHR, 2007, 'First Report of the Dalit Floods in Bihar 10th August 2007', National Campaign on Dalit Human Rights
- ⁴⁶ Department for International Development (2004) op.cit.
- ⁴⁷ After the earthquake, agricultural extension workers rarely travelled to the disaster-affected areas, but these sessions with community and media representatives before the monsoon helped to put pressure on them to plan practical actions like de-worming and poultry vaccination, to prevent spread of epidemics (Naeem Iqbal, SUNGI Development Foundation, Partners workshop, 16 May 2007, Islamabad).

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