

# Disaster risk reduction: a development concern

*A scoping study on links between  
disaster risk reduction,  
poverty and development*



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## Department for International Development

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## Acronyms

ADPC	Asian Disaster Preparedness Centre
ADRC	Asian Disaster Reduction Centre
CAP	Country Assistance Plan
CCA	Common Country Assessment
CEPREDENAC	Coordination Centre for the Prevention of Natural Disasters in Central America
CHAD	DFID Conflict and Humanitarian Affairs Department
CRED	Centre for Research on the Epidemiology of Disasters
DAC	OECD Development Assistance Committee
DFID	UK Department for International Development
DiMP	Disaster Mitigation for Sustainable Livelihoods Programme
DIPECHO	EC Humanitarian Office Disaster Preparedness Programme
DRI	Disaster Risk Index
EC	European Commission
ECLAC	UN Economic Commission for Latin America and the Caribbean
EM-DAT	Emergency Database (managed by CRED)
FAO	UN Food and Agriculture Organization
FEWS NET	Famine Early Warning System Network
GDP	Gross Domestic Product
GIEWS	Global Information and Early Warning System
GRID	Global Resource Information Database
HIPC	Heavily Indebted Poor Countries
IDB	Inter-American Development Bank
IDNDR	UN International Decade for Natural Disaster Reduction
IFRC	International Federation of the Red Cross and Red Crescent Societies
IGAD	Intergovernmental Authority on Development (Horn of Africa)
IMF	International Monetary Fund
LA RED	Network for Social Studies on Disaster Prevention in Latin America
MANDISA	Monitoring, Mapping and Analysis of Disaster Incidents in South Africa
MDG	Millennium Development Goal
NePAD	New Partnership for African Development
NGO	Non-governmental Organisation
ODA	Official Development Assistance
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
PAHO	Pan American Health Organization
PPP	Plan Puebla Panama
PRSP	Poverty Reduction Strategy Paper
SADC	The Southern African Development Community
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDAF	UN Development Assistance Framework
UNDG	UN Development Group
UNDP	United Nations Development Programme
UNDP-BCPR	UNDP Bureau for Crisis Prevention and Recovery
UNECA	UN Economic Commission for Africa
UNESCAP	UN Economic and Social Commission for Asia Pacific
UNFCCC	United Nations Framework Convention on Climate Change
UN-HABITAT	United Nations Human Settlements Programme
UNICEF	United Nations Children's Fund
UN-ISDR	UN Secretariat for the International Strategy for Disaster Reduction
USAID	United States Agency for International Development
WHO	World Health Organization



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# Disaster risk reduction: a development concern

## A scoping study on links between disaster risk reduction, poverty and development

### Summary

#### Why worry about disasters?

1. This Scoping Study is part of DFID's strategic effort to assess the significance of disaster risk in its development work. It aims to explore evidence on linkages between poverty alleviation, development and disaster risk reduction, and to establish why disaster risk reduction is often not part of development policy and planning. It is aimed primarily at development professionals within DFID and other bilateral donor agencies, and is intended to contribute to the development of a disaster reduction strategy for DFID in the near future.
2. There is convincing evidence that the number and seriousness of disasters is increasing, and that poor countries and poor communities are disproportionately affected. The recorded number of disasters, the number of people they affect and the property losses they cause have risen dramatically each decade since reliable records began in 1960. This conclusion remains valid even though reporting of disasters is incomplete, definitions are inconsistent and the data must be treated with caution. An average year will see disasters kill over 60,000 people and affect at least a quarter of a billion, though numbers fluctuate widely and in 2003 almost 90,000 disaster deaths were recorded.
3. More than half of disaster deaths occur in low human development countries even though only 11% of people exposed to hazards live there, and these countries suffer far greater economic losses relative to their GDP than richer countries. Capacity to reduce risk is also much weaker in poorer countries.
4. Humanitarian responses to disaster impacts now cost Development Assistance Committee (DAC) donors an annual US\$ 6 billion or seven percent of total official development assistance (ODA) flows, and this proportion is rising. Yet this Study shows that disaster-related costs to development run much deeper than this.

#### What makes a disaster?

##### *Disasters and disaster risk reduction defined*

5. The conception of *disasters*<sup>1</sup> as exogenous and uncontrollable events temporarily departing from normality still pervades development thinking. This study recognises instead that human vulnerability, and its longer-term societal origins, need to be centre-stage.
6. '*Disaster risk reduction*' describes measures to curb disaster losses, through minimising the hazard, reducing exposure and susceptibility and enhancing coping and adaptive capacity. Good disaster risk reduction also continues after a disaster, building resilience to future hazards.

##### *A diversity of hazards*

7. Hazards come in all shapes and sizes. This Study is primarily concerned with *natural hazards* – those that are weather-related or geophysical in origin – but recognises that some 'natural' hazards are partly human-induced and that the disasters they cause are anything but 'natural'. Also considered here are ways in which these hazards interact with epidemics

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<sup>1</sup> A *disaster* is defined in this Study as 'a severe disruption to the survival and livelihood systems of a society or community, resulting from their vulnerability to the impact of one or a combination of hazards and involving loss of life and/or property on a scale which overwhelms the capacity of those affected to cope unaided'.



(especially HIV/AIDS), human impacts on the environment including 'technological' hazards, and conflict. For example many 'natural' disasters occur within complex political emergencies, so the distinction between the two may become blurred.

#### *Vulnerability and poverty*

8. *Vulnerability* results from people's *exposure* to hazard and their *susceptibility* to hazard impacts. It reflects social, economic, political, psychological and environmental variables shaped by dynamic pressures (such as urbanisation) that are deeply rooted and linked to the national and international political economy. The converse of vulnerability is *capacity* to anticipate, cope with, resist and recover from hazard impacts. People's capacities can be realised through collective action within a favourable institutional environment (local, national and international) to establish societal *resilience*. Resilience at the community level, often highly evolved, may be challenged by new pressures such as climate change and globalisation or limited by fatalistic belief systems, but can be boosted by appropriate action on a wider scale.

9. *Poverty* and vulnerability are highly correlated, but do not completely overlap. Poorer people are generally both more exposed and more susceptible to hazards, suffer greater relative loss of assets, and have a lower capacity to cope and recover. While the better-off may choose to live in high risk areas, the poor often have no other choice. Not all disasters affect the poorest most – those who are outside but close to the margins of absolute poverty may also be highly vulnerable to disaster shocks. Furthermore, disasters can induce poverty, making better-off people poorer and the poor destitute through their vulnerability to disaster and inability to avoid impacts.

10. In policy terms this means that poverty reduction can help reduce disaster risk, but this requires an active, in-built focus on disaster issues. Disaster risk reduction adds value to poverty reduction measures, protecting the poor from and boosting their capacity to cope with specific hazard impacts. Risk reduction efforts can also promote poverty reduction by helping the less poor avoid the impoverishing effects of disasters.

#### **Why should disasters be a development concern?**

##### *Disasters hold back development*

11. Disasters hold back development and progress towards the Millennium Development Goals (MDGs). Many countries are not on course to meet MDG1, the prime goal of halving extreme poverty and hunger by 2015. Country progress reports on MDGs frequently note progress on MDG1 being affected by disasters. While these effects are difficult to quantify, increases in numbers below poverty thresholds following a disaster have showed up in aggregate national statistics in many cases – for example, following climatic effects of El Niño in Ecuador (1997-1998) and loss of agricultural output after Hurricane Mitch in Honduras (1998).

12. Disasters affect poverty reduction in several ways. They have macroeconomic impacts, directly through physical damage to infrastructure, productive capital and stocks, but also indirectly and in the longer term by affecting productivity, growth and macroeconomic performance. These hit the poor hardest for several reasons, including loss of tax revenue and diversion of resources into disaster response affecting basic state services or increased price (especially food price) inflation. Moreover recent studies suggest that both governments and donors tend to fund disaster relief and rehabilitation assistance by reallocating resources from development programmes. This can be expected to affect the poor disproportionately through adverse effects on poverty reduction efforts.

13. Impacts on poverty and food security at the sub-national level and on communities and households can be much more severe and may not appear in national statistics. Disasters stretch coping strategies to breaking point, have long term effects on livelihoods and often tip the poorest into destitution. High frequency hazards such as drought trigger immediate food crises, but can also have longer-term 'ratchet' effects which impede recovery in interim periods, especially when combined with other pressures such as HIV/AIDS, poor governance and conflict.

14. In a host of ways, disasters impact upon progress towards the remaining MDGs. Schools may be destroyed or closed down by earthquakes or floods, but an equally important impact on education (MDG2) can come via inability of families made poor and hungry to send children to school. Disasters leave women and girls – including mothers – with heavier responsibilities and workloads and poorer health, and in a number of studies have been associated with increased domestic violence and sexual harassment (MDG3&5). Children are in greater danger in floods and drought, through drowning, starvation and disease (MDG4). Disease risks and damage to health infrastructure can directly follow disasters, but indirectly the poverty and malnutrition to which disasters contribute bring lowered disease resistance, and may lead women and girls to resort to sex work and risk HIV infection (MDG4&6). Disasters can increase rural-urban migration, and in cities disproportionately affect slum dwellers (MDG7). Storms and tidal surges set back gains from partnerships with small island states (MDG8). Such diverse consequences tend to go far beyond the immediate impacts which make media headlines and international disaster statistics, suggesting one reason why their role in holding back development may be much underestimated.

*Disasters are rooted in development failures*

15. Disasters do not just happen – they result from failures of development which increase vulnerability to hazard events. Failure of institutions governing development can be found at all levels, from local and national institutions weakened by skills shortages or corruption to institutions of global governance influenced by powerful countries and powerful interests within them. This global context influences disaster frequency and severity in many indirect ways. For example, the mushrooming of ‘new wars’ is a feature of the post-Cold War global political economy, but is also a significant issue for disaster risk reduction because violent conflict and instability interact with natural and biological hazards such as drought and HIV/AIDS in Africa, with devastating consequences.

16. Development processes can lead to disaster more directly, by increasing exposure or susceptibility to hazard. Increased exposure can result from global level influence of greenhouse gas emissions on the frequency and severity of weather-related disasters, down to local level projects involving destruction of mangrove stands which protect coasts from tidal storm surges to make way for shrimp farms, or rapid urban growth which increases exposure to landslides, earthquakes or fires. Increased susceptibility results from development measures which erode capacity to cope with and recover from hazard impacts. The running down of state-run social protection schemes, or the decline of informal safety net mechanisms associated with some development projects, can have the same effect.

*Poorly planned attempts to reduce risk can make matters worse*

17. Attempts to reduce risk without adequate planning can be counterproductive. Spontaneous or government-led resettlement of populations out of drought- or flood-prone areas, for example, has a long history of poor planning of vital services in areas of resettlement resulting in the creation of new risks. Similarly, large-scale engineering approaches to minimising flood hazards have sometimes, as in Bangladesh, increased risk for people living elsewhere. Poor quality and poorly maintained infrastructural developments – schools, hospitals, flood defences etc. – may even lead to higher casualties when they fail than if they had not been constructed.

*Disaster responses can themselves exacerbate risk*

18. Responses to disasters can themselves prolong crises or create new risk. Humanitarian programmes, in particular, are indispensable in saving lives and relieving suffering in emergency situations, but may sideline local leadership, governance and technical capabilities which are needed for long-term resilience. Patterns of donor resourcing – poorly matched to needs, often unpredictable and sometimes politically motivated – can be detrimental. There tends, for example, to be an inappropriate emphasis on food assistance relative to other short- and longer-term needs for sustaining both lives and livelihoods.

### *Making development 'disaster proof': what are the gains?*

19. Integrating disaster risk reduction into development has the capacity to transform 'vicious spirals' of failed development, risk accumulation and disaster losses into 'virtuous spirals' of development, risk reduction and effective disaster response. Gains include positive direct and indirect impacts for each of the MDGs. Alongside humanitarian and social arguments for investing in risk reduction initiatives, there are many cases where economic benefits appear to have been convincingly demonstrated, although a more systematic approach to appraising costs and benefits of risk reduction activities is badly needed.<sup>2</sup>

### **Why does development tend to overlook disaster risk?**

20. If disasters are a major threat to and are partly rooted in development, why the apparent lack of commitment to reducing disaster risk? The Study found the most important factors relate to incentive, institutional and funding structures, assumptions about the risk-reducing capacity of pro-poor development, and inadequate exposure to and information on disaster issues.

#### *Incentive, institutional and funding structures*

21. There is a perverse architecture of incentives stacked against disaster risk reduction. It is generally a long-term, low-visibility process, with no guarantee of tangible rewards in the short term. Media interest is low. In contrast, disasters themselves are headline news when they strike, at least for a short period. Politicians in affected countries can gain kudos from being associated with humanitarian response, but are less interested in longer-term prevention and preparedness unless prodded by popular anger. Yet where the political will exists, results can be impressive. India has largely contained famine since Independence; Cuba kept deaths down to just five when Hurricane Michelle struck in 2001.

22. Governments find donors reluctant to fund risk reduction, yet when they declare a disaster the funds flow freely. Conditionality associated with the Poverty Reduction Strategy (PRS) process has meant countries like Mozambique effectively having to choose between social spending and risk reduction. Experience suggests that donors also respond to media pressure, but when the story ceases to be news, interest in funding post-disaster rehabilitation and building resilience to future hazards wanes.

23. There is an institutional gulf between agencies' humanitarian and development wings. While in many agencies efforts have been made to close this gulf, uncertainty at the interface between humanitarian and development assistance remains. Separate humanitarian and development funding streams add to the complication. Pressure to focus on the MDGs may lead development specialists to see disasters as of largely tangential concern in all but the most hazard-prone countries. Disaster risk reduction therefore tends to be left to the humanitarian side – even though it is not primarily a humanitarian issue. Where crises are concerned, conflict and HIV/AIDS have tended to crowd out attention to 'natural' disasters. Thus exhortations by disasters specialists to 'mainstream' yet another issue, especially when delivered with more missionary zeal than convincing evidence, often fail to generate enthusiasm.

24. Non-governmental organisations (NGOs) do not face the same institutional barriers and pressures, and so generally find it easier to span the humanitarian-development divide. Yet they naturally follow the priorities of bilateral donor agencies that fund them. Furthermore, both donors and NGOs are under pressure to disburse and expend funds efficiently and within relatively short time-spans, while disaster risk reduction is a longer-term, lower-cost but relatively staff-intensive process.

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<sup>2</sup> This gap is currently being addressed in a ProVention study on *Measuring Mitigation* (Benson & Twigg, forthcoming).

### *Assumptions about the risk-reducing capacity of pro-poor development*

25. The aforementioned links between poverty and vulnerability may lead to an assumption that development that aims to reduce poverty will automatically address vulnerability. This brings a danger that the role of risk reduction in actually achieving genuine pro-poor development will be overlooked. Much development is still not leading to true, sustainable poverty reduction, and this limited progress can partly be explained by its failure to take proper account of disaster risk. This requires systematic assessment of exposure and susceptibility to hazards for different groups of people, and explicit attention to options for reducing this vulnerability, to be part of the process of designing development interventions.

26. Where disasters are frequent and affect large sections of the population, risk reduction begins to force itself onto the development agenda, as illustrated in the relative success of Bangladesh in implementing flood risk reduction measures. There are early signs of a parallel process in southern Africa and Ethiopia, with unprecedented efforts by humanitarian and development agencies to collaborate to find ways to move away from reliance on short-term emergency responses to food insecurity to a longer-term development-oriented ones which involve closer partnerships with governments.

### *Inadequate exposure to and information on disaster issues*

27. Because disasters are often seen as an exclusively humanitarian concern, development professionals are rarely exposed to disaster risk reduction issues. There was a UN International Decade for Natural Disaster Reduction (IDNDR) (1990-1999), but this achieved only a modest profile and tended to focus narrowly on technical (science and technology) aspects of hazard management. More recent work has enhanced our understanding and knowledge of how to design policies and programmes which tackle the governance and socio-economic aspects of disaster risk. There is also an international database on disasters, but much remains to be achieved in improving the quality and coverage of the data.

### **Tools for better integrating disaster risk reduction into development**

28. This Study suggests some useful entry points whereby bilateral donors can promote disaster risk reduction in international and national development agendas. These include Poverty Reduction Strategy Papers (PRSPs), UN Development Assistance Frameworks (UNDAFs), donor country assistance strategies/plans, National Adaptation Programmes of Action (NAPAs) for climate change, various partnership agreements with implementing agencies and governments, tools such as project appraisal and early warning systems. There are also many relevant international initiatives and policy forums, such as the OECD-DAC, the Commission for Africa, and the World Conference on Disaster Reduction and its follow-up.

29. Partnership agreements with multilateral agencies (e.g. DFID's Institutional Strategy Papers) and NGOs (e.g. DFID's Partnership Programme Agreements) are further routes by which donors can promote disaster risk reduction principles in the programmes and projects they fund, as well as to support agencies such as the IFRC which work on disaster issues. Agreements with governments, through direct budgetary support and programme and project level support, may also offer entry points for disaster risk reduction.

### **Recommendations**

30. The core recommendation of this Study is that *DFID and the wider community of bilateral donors should establish and implement time-bound strategies for incorporating the reduction of risk from disasters as a central concern of development policy and programming as well as of humanitarian work, and for promoting and supporting a risk reduction agenda amongst their development partners globally.* Remaining recommendations concern action to be taken to achieve this end:

- *Institutional arrangements and cross-sectoral coordination:* establish appropriate institutional arrangements for promoting a development approach that is risk-aware within

donor organisations, improve cross-sectoral communication and understanding of risk reduction issues and responsibilities, and bring together geographical and sectoral staff to draw up new ways of working at the humanitarian-development interface using a multi-hazard approach to assessing and addressing risk.

- *Operational guidelines and training:* amend guidelines for preparing strategy papers and funding agreements to require up-to-date disaster risk assessment for the country and its main regions. This should include analysis of how risks are being addressed and identification of additional initiatives to be undertaken if they are not being properly managed.
- *Promote risk reduction at national level ...*
  - make maximum use of PRSPs and UNDAFs as key entry points for promotion of a disaster risk reduction agenda in the poorest countries;
  - ensure that donor-government consultations leading up to country assistance plans are used as opportunities to design programmes which are risk-aware at national and sub-national levels;
  - promote greater political will for disaster risk reduction within partner countries;
  - include 'weak and failing states' in assistance for disaster risk reduction, recognising that special considerations will apply;
  - explore the scope for promoting financial instruments for risk management, for example affordable insurance schemes, with possible private-sector involvement.
- *... within international and regional organisations and forums...*
  - promote, and expand support for, disaster risk reduction work in international and regional organisations and forums;
- *...in the media...*
  - encourage national and international media to take a greater interest in and help raise awareness of risk reduction issues;
- *... and in research and education...*
  - expand support for research on key issues in disaster risk reduction, including on the...
    - improvement of systems for the collection and analysis of information on disasters and their immediate and longer-term impacts;
    - links with climate change, health, livelihoods and governance;
    - approaches to cost-benefit analysis;
    - options for minimising hazards.
- *Evaluate progress in mainstreaming disaster risk reduction...*
  - develop performance targets and indicators to assess progress in integrating disaster risk reduction into both humanitarian and development policies and programming.



## 1. Introduction: why worry about disasters?

### Summary

This section sets out the Study objectives and approach, and highlights the challenge posed by trends in disasters and their impacts. Disasters are increasing in number, affecting growing numbers of people and causing increasing losses. Poor countries and poor communities are disproportionately affected. Humanitarian assistance has done much to keep disaster deaths in check, but its cost is rising steadily and represents a significant diversion of resources from development. Yet costs of disasters to development run much deeper and affect progress towards the MDGs.

### Objectives of this Study

31. DFID's 1997 White Paper (p. 44) made a commitment to ensuring that:

'Disaster preparedness and prevention will be an integral part of our development co-operation'

Since 2000, DFID's Conflict and Humanitarian Affairs Department (CHAD), which is responsible for developing disaster risk reduction policy, has been engaging with several DFID country offices as well as supporting a range of international initiatives in this area<sup>3</sup>. CHAD has commissioned this Scoping Study as part of its efforts to promote a more strategic approach to disaster reduction within DFID. The Study aims to provide policy makers and planners with appropriately framed evidence on the linkages between poverty alleviation, development and disaster risk reduction, and in so doing to establish why, given the state of our knowledge, disaster risk reduction is generally poorly integrated into development policy and planning. The Study is intended primarily for development professionals within DFID and other bilateral donor agencies, but will hopefully be of interest to a wider audience. It is intended to contribute to the development of a disaster reduction strategy for DFID in the near future.

32. This Study does not involve primary research, but uses secondary sources and interviews with disasters and development professionals to bring together existing information and knowledge on disaster-poverty-development links and on constraints to incorporation of disaster risk reduction into development.

### Global disaster trends

33. There is convincing evidence that the number and seriousness of disasters are increasing, and that poor countries and poor communities are disproportionately affected. Disasters have killed fewer people during the last two decades than previously, in part due to more effective international response efforts, but the number of disasters, the number of people they affect and the property losses they cause have risen dramatically each decade since reliable records began around 1960. So marked are the trends that this conclusion can be reliably drawn even though reporting of disasters is incomplete, definitions are inconsistent and the data must be treated with caution.

34. Available estimates suggest that over the decade 1993-2002 there was a global annual average of 540 recorded disasters due to 'natural' and 'technological' hazards, killing 62,000 people and affecting 250 million each year (Table 1). The figures fluctuate widely: in 2002 recorded deaths fell below 25,000 but numbers affected exceeded 600 million; whereas in

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<sup>3</sup> These include the ProVention Consortium, the UN International Strategy for Disaster Reduction (ISDR), UNDP's Bureau for Crisis Prevention and Management (BCPR) and the International Federation of Red Cross and Red Crescent Societies (IFRC).



**Table 1: Disaster impacts by hazard type, 1993–2002**

Hazard type	Deaths (thousands)	% of total	Affected (millions)	% of total
Drought/famine	276	44%	734	29%
Floods	94	15%	1,401	56%
Windstorms	61	10%	313	13%
Earthquakes	75	12%	35	1%
All 'natural' hazards	531	85%	2,496	100%
Technological hazards	93	15%	1	0%
Total (10 years)	624	100%	2,497	100%

Source: IFRC (2003)

2003 deaths reached almost 90,000<sup>4</sup> while the number affected was close to the 10-year average. The number of weather-related disasters continues to rise. The greatest number of immediate deaths in these disasters was attributed to droughts/famines, followed by floods, windstorms and earthquakes. Floods affected many more people than any other disaster hazard, though medium and longer-term drought and famine impacts are thought to be significantly under-reported.

35. Almost 80 percent of these disasters were in what UNDP categorises as medium and low human development countries. Only one in every hundred people affected lived in high human development countries. A recent UNDP study found that whilst only 11% of those people exposed to natural hazards live in countries with low human development they account for 53% of disaster deaths.<sup>5</sup>

36. In 2004 the World Bank estimated annual costs of the world's natural disasters at US\$55 billion. In Asia alone the 1990s saw losses to infrastructure reach US\$10 billion per year<sup>6</sup>. Unsurprisingly, property losses are highest in richer countries because of the higher monetary value of physical assets lost. But as a proportion of GDP, poorer countries suffer far higher losses, with a correspondingly greater drain on their potential for development.<sup>7</sup>

37. Despite suffering greater impacts from disasters than richer countries, poorer countries have a weaker capacity to mitigate disaster impacts, as Box 1 illustrates. Within both rich and poor countries, it is the poorest and most marginalised social groups who suffer most.

38. Climate change threatens to exacerbate the global disaster burden still further. It brings the prospect of shifts in average climatic conditions that may heighten the vulnerability of low-income populations, as well as changes in the magnitude and distribution of extreme events such as floods, droughts, windstorms and thermal extremes. The Intergovernmental Panel on Climate Change (IPCC) explicitly recognises that the 'impacts of future changes in climate extremes are expected to fall disproportionately on the poor'.<sup>8</sup> The dangers are highlighted in DFID's series of key sheets on *Climate Change and Poverty*.<sup>9</sup>

<sup>4</sup> These included over 30,000 in Europe, mainly due to the August heatwave, and 26,000 in the Bam earthquake, Iran

<sup>5</sup> UNDP (2004)

<sup>6</sup> World Bank (2004)

<sup>7</sup> UN-ISDR (2004:25)

<sup>8</sup> IPCC (2001:6)

<sup>9</sup> DFID (2004c)

Box 1: Comparative examples of disaster reduction capacities in richer and poorer countries	
Richer countries	Poorer countries
<ul style="list-style-type: none"> <li>• Have regulatory frameworks to minimise disaster risk which are enforced</li> <li>• Have effective early warning and information mechanisms in place to minimise loss of life</li> <li>• Have highly developed emergency response and medical care systems</li> <li>• Insurance schemes spread the burden of property losses</li> </ul>	<ul style="list-style-type: none"> <li>• Regulatory frameworks are weak or absent, and/or the capacity to enforce them is lacking</li> <li>• Lack comprehensive information systems linked to pre-emptive response</li> <li>• Divert funds from development programs to emergency assistance and recovery</li> <li>• Those affected bear full burden of property losses and may lose livelihoods.</li> </ul>

### Why donors should be concerned

39. While total official development assistance (ODA) fell in real terms during the 1990s, humanitarian funding has risen. OECD estimates for 'emergency and distress assistance' from DAC donors have risen from an average of 4.8% of total ODA in 1990-94 to 7.2% in 1999-2003, and in 2003 exceeded US\$ 6 billion or 7.8% of ODA.<sup>10</sup> Yet even these estimates do not tell the whole story. If non-OECD donors and post-conflict 'peace activities' are included, overall humanitarian spending is about twice as high as official figures suggest<sup>11</sup> even while many humanitarian needs go unmet. Much of this spending relates to 'natural' disasters and appears, as Section 3.1 shows, to involve at least some reallocation of resources from development cooperation.

40. Yet the costs of disasters to development go much deeper than this. Following a brief discussion in **Section 2** of some basic concepts and issues underpinning this Study, **Section 3** outlines ways in which disasters are undermining progress towards the Millennium Development Goals (MDGs), destroying development gains even as donors seek to expand their efforts to meet MDG targets. It also shows that the causation works both ways: disasters are a product of past development. Risks from 'natural' disasters are also multiplied by other threats to development such as environmental degradation, HIV/AIDS, conflict and the unequal impacts of the global political economy.

41. There is much that can be done to reverse this vicious spiral. This Study shows ways in which disaster impacts can be mitigated through pre-emptive action if that action is incorporated into mainstream development work, and examines issues of cost-effectiveness. This is not an additional burden to be added to that of meeting the MDGs – it is an essential part of the same task, strongly justifiable on humanitarian, economic, political and human development grounds.

42. The argument is not new – it has been made since well before the start of the International Decade for Natural Disaster Reduction (IDNDR) in 1990 and its merits are not in dispute. But if the case for building disaster risk reduction into development is so compelling, why then the lack of significant progress? **Section 4** considers some key constraints, including incentive, organisational and funding frameworks, assumptions about poverty-vulnerability links, and inadequate exposure to and information on disaster issues.

### What donors can do

43. There are signs that donor perceptions are beginning to change. Some donors now

<sup>10</sup> OECD (2004). This shows that total net ODA from DAC countries was US\$ 55.6 billion in 1991-1992, and US\$ 54.2 in 2001-2002 (two-year averages) at 2001 prices. As a share of donors' gross national income this represented a fall from 0.33% to 0.23%. Some bilateral donors, DFID included, have recently announced substantial increases in ODA.

<sup>11</sup> Global Initiatives (2003)

earmark, or plan to earmark, a proportion of humanitarian spending for aspects of disaster risk reduction including prevention and preparedness, ranging between 2 and 15 percent. This is a welcome development, though at one percent or less of total ODA it remains meagre in comparison to overall disaster impacts. Yet risk reduction is often not distinguishable as a separate component of development programming, but is about the manner in which development is conducted. **Section 5** suggests some priority entry points for bilateral donors to support development that will reduce risk. **Section 6** concludes by recommending priority areas for action that DFID and other donors can take to increase momentum in this direction.

## 2. What makes a disaster?

### Summary

Section 2 offers a summary of contemporary concepts of disasters and defines key terms used in this report as a basis for the analysis of disasters and development links that follows in Section 3. It points to common misperceptions about disasters, and defines disaster (and disaster risk reduction) in terms of a combination of hazardous events and human vulnerability. The diversity of hazards, components of vulnerability and related concepts of livelihoods, coping, adaptation, capacity and resilience are briefly explored. Some important distinctions between *poverty* and *vulnerability* are highlighted. The much-used 'disaster management cycle' model is outlined, and its relevance and drawbacks explained.

### Characteristics of a disaster

#### 44. 'Disaster':

a sudden event, such as an accident or natural catastrophe, that causes great damage or loss of life....

– ORIGIN late 16<sup>th</sup> cent.: from Italian *disastro* 'ill-starred event'.

New Oxford Dictionary of English, 1998

Despite the word's origins, it is not just astrologists who conceive of 'disasters' as exogenous and uncontrollable events. Such a concept still pervades development thinking, with an implicit assumption that disasters are temporary, unavoidable aberrations to normal development processes, requiring a timely humanitarian response before development can resume. Thus DFID's *Tools for Development* handbook (DFID, 2002) mentions disasters only as an example of 'Risks that are essentially uncontrollable' (p.6.1) and in a category of risk labelled as 'Act of God' (p.6.2).

45. A problem with conceiving of disaster in this way is that it becomes too easy to imagine disaster events as isolated moments or periods lying outside the influence of development planning. It is argued here that disasters are, on the contrary, an outcome of processes of risk accumulation deeply embedded in contemporary and historical development decisions. Disaster risk results from a combination of *hazards* (potentially damaging events or processes) and people's *vulnerability* to those hazards. Both hazards and vulnerability are to varying extents products of development processes.

46. A further common perception is that disasters are usually large-scale events involving a single hazard, such as a flood or an earthquake. As far as scale is concerned, there is at present no agreed threshold at which point a collection of discrete losses or disruptions can reach disaster status. Political spin can either exaggerate or play down the scale of a disaster, with an eye respectively on donor aid or on private sector investment flows. The sole publicly accessible global database on disasters and their impacts, EM-DAT (the original source for Table 1), uses an absolute definition which is statistically convenient but inevitably arbitrary.<sup>12</sup> Scale needs to be seen in relation to the population and economic size of an impacted country for meaningful international comparisons to be made. A disaster with major sub-national impacts may appear relatively unimportant at national or international level. Scale is particularly important for small island developing states.

<sup>12</sup> EM-DAT is managed by the Centre for Research on the Epidemiology of Disasters (CRED) at the Université Catholique de Louvain in Belgium. To qualify for inclusion disaster events must meet at least one of the following criteria: 10 or more people killed, 100 or more people reported affected, a call for international assistance, or a declaration of a state of emergency.

47. While a single hazard may predominate, large disaster events tend to be made up of many smaller events, often unrecorded and triggered by a range of hazards. Landslides or fires may be triggered by the impacts of hurricanes or earthquakes, but are not recognised in global statistics which consequently hide the diversity and frequency of disaster. This phenomenon is likely to increase with urbanisation as cities bring multiple hazards into close proximity. Similarly, impacts on one system can have knock-on effects on a connected system, magnifying the final impact of an event. For example, flood damage to a transport network may cause loss of market access damaging livelihoods and businesses, or it may interrupt service delivery and impact on public health. Some of the most destructive disasters result from complex interactions between hazards acting simultaneously or sequentially, as occurs with drought, crop pest attacks, HIV/AIDS, malaria and conflict in Africa.

48. To capture these ideas disasters specialists have developed a range of definitions of 'disaster', though none is universally accepted. In this Study, a disaster is conceived as *a severe disruption to the survival and livelihood systems of a society or community, resulting from their vulnerability to the impact of one or a combination of hazards and involving loss of life and/or property on a scale which overwhelms the capacity of those affected to cope unaided.*<sup>13</sup>

### **Disaster risk reduction**

49. 'Disaster risk reduction' in this Study describes policies and practices to minimise (with a view to longer-term prevention) disaster losses. These involve interventions in three broad areas:

- hazard minimisation (where possible);
- reducing exposure and susceptibility;
- enhancing coping and adaptive capacity.

50. These elements point to the qualities that development should incorporate to avoid generating the preconditions for future disaster. On the ground they are often difficult to separate. In one risk reduction project in Santo Domingo, Dominican Republic, local participatory slope stabilisation *minimised hazard* by containing landslide risk. The social networks, skills and experience gained in participating also *built resources for coping and adaptation*. Discussions following the project even led to residents lobbying the municipality for alternative housing sites and services that could further *reduce exposure and susceptibility*.

51. Disaster risk reduction seeks to pre-empt a disaster, but should also be a feature of rehabilitation following a disaster in order to (re)build resilience to future disasters. This opens an opportunity for continuity of engagement with local and national actors. The agenda of disaster risk reduction presents an alternative policy process to that which segregates development planning from disaster management, and in which the latter is seen as the preserve of humanitarian actors.

### **The diversity of hazards**

52. Disasters are usually categorised by the most prominent or immediate hazards that trigger them, as in Table 1 (page 8). This Study's focus is on disasters directly associated with hazards that are weather-related (e.g. storms, drought, flooding, heat or cold shocks) or geophysical (e.g. earthquake, volcano and landslides) in origin. These are known as '*natural disasters*', a term which belies the all-important recognition that while the trigger for these

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<sup>13</sup> The terms 'crisis', 'disaster' and 'emergency' are often used interchangeably, causing some confusion. A 'crisis' can most usefully be seen in this context as a time of danger when decisive action is needed to avert a disaster, while the term 'emergency' refers to a need for urgent response, usually by international humanitarian agencies, to a crisis or disaster.

events may be associated more with physical and environmental than social pressures, the causes are usually reflective of a complex interplay with pressures caused by human action/social pressures such as population growth and poverty, thus the consequent disasters are anything but natural. Furthermore, even the trigger hazards may be partly human-induced, for example as part of processes of environmental degradation or climate change. Ultimately 'natural' disasters are often no less 'complex' than the most involved internal conflicts.

53. Biological hazards (e.g. disease epidemics, especially HIV/AIDS) and conflict are both covered in detail in numerous other studies<sup>14</sup> and for this reason will only be touched upon in this piece of work. However, the importance of interactions between 'natural' and other hazards – including 'technological' ones (e.g. industrial accidents and waste, or infrastructure failures) – is a recurring theme. Boundaries between 'natural' disasters and complex political emergencies, for example, may become blurred where long-running conflict increases disaster impacts.

54. Viewed from the perspective of policy planning three characteristics that distinguish different kinds of natural hazard are worth noting. Each has a distinct influence on the options available for disaster risk reduction.

#### *Rapid-onset and slow-onset hazards*

55. 'Rapid-onset' hazards include earthquakes, volcanoes, fires, landslides, cyclones, tsunamis, flash flooding and some kinds of epidemic. Some of these hazards afford very limited or virtually no opportunity for warning before their impacts are felt. This makes it all the more important not only to establish accurate and well functioning early warning systems where warning is feasible (as in the case of cyclones and many floods, for example), but also to build resources to reduce vulnerability, enhance coping capacity and prepare for disaster response as part of development practice.

56. 'Slow-onset' hazards are those that build up over weeks, months or even years. Drought leading to food insecurity is most common, but some flood events might also be considered as slow onset. If early indicators of a potential crisis are detected then warning can be a key tool in building resilience, as recognised in the large investment in food security early warning systems. Many people consider HIV/AIDS to be a slow-onset disaster, dwarfing all others in the magnitude and breadth of its impacts. This is an issue which has been the focus of many seminal policy papers. Thus for the purposes of this Study, HIV/AIDS is looked at from the perspective of its impact on the vulnerability context surrounding disasters and risk reduction, as Box 2 illustrates.

#### *Hazard probability and uncertainty*

57. Hazards differ both in their probability of occurrence and in the degree of certainty with which that probability can be assessed. The probability of a natural hazard of a given magnitude occurring within a given geographical area and time period can typically be assessed only by projecting from their historical record of frequency and regularity. For islands and coasts exposed to hurricane and cyclone tracks, riverine and coastal communities at risk from flooding at spring tides or during the rainy season, or agricultural communities facing drought every few seasons, these are hazards with a high probability that can be assessed with reasonable accuracy. A high assessed probability for a specific hazard strengthens the case for integrating associated risk reducing measures into everyday development planning.

58. Uncertainty in relation to natural hazards increases when past frequency is low, when no cyclical patterns can be reliably discerned, or when secular change is underway which undermines the value of the historical record in assessing probability. Uncertainty is high for

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<sup>14</sup> In parallel with this Study, DFID-CHAD has commissioned a study on links between conflict, poverty and development, due for completion in late 2004. See also Box 6 in this Study.



### Box 2: Links between epidemics and natural hazards

This Study focuses on natural rather than biological hazards; however it is important to note the interaction between the two as well as with other threats to development such as conflict. This is particularly the case given that epidemics, natural disasters and conflicts are often looked at separately and their dynamic interaction is thus often overlooked. Floods are associated with diarrhoeal epidemics and volcanic eruptions with respiratory problems, while other events such as moderate earthquakes may bring only minimal disease outbreaks. Most complex is the role of disease as a cause of death in drought-related famine.

When endemic diseases such as malaria, tuberculosis and diarrhoea reach epidemic proportions they affect all aspects of life and development planning. The HIV pandemic will impact on development over several decades, undermining progress towards development targets and demanding changes to development policy and practice including disaster risk reduction policy.

HIV/AIDS differs from other epidemics because it affects prime-age adults, killing the most productive members of society. At high prevalence the epidemic can undermine production and service provision in both public and private sectors, increasing demands on already stretched public health services, creating a growing number of orphans, affecting family and social structure, creating a burden on the elderly and impairing knowledge transfer between generations. The loss of productive adults and parents leads to a steady depletion of agricultural livelihoods through lost labour in particular, but also associated asset depletion (e.g. failure to maintain irrigation channels, terraces) and increased vulnerability to other shocks such as drought that cause food shortages.

For these reasons the HIV/AIDS pandemic is an important contextual element in the unfolding of 'natural' disasters, with particular impacts on people's vulnerability to natural hazards, and in efforts to reduce disaster risk. The combined impact of HIV/AIDS and drought on food security is felt most acutely in sub-Saharan Africa where six countries are estimated to have over 20% of adults HIV positive, and has been termed 'new variant famine'.

HIV/AIDS is changing the character of vulnerability even in those households that are not chronically food insecure. For women HIV infection brings stigma and discrimination, so that for female-headed households HIV/AIDS leads to social isolation, loss of land, tools and assets and increased vulnerability to hazards. The number of children orphaned by AIDS is growing (now 12 million in sub-Saharan Africa), and many are in situations where they are at higher risk from natural hazard impacts as well as social exploitation.

*Source:* Wisner *et al.* (2004); Barnett & Whiteside (2001); De Waal & Whiteside (2003); UNAIDS (2004)

volcanoes and earthquakes and related tidal surges. Risk zones have been identified, but the timing of the next hazard event at a given location is generally uncertain because they are irregular and infrequent.<sup>15</sup> With climate change and associated sea-level rise the frequency, intensity and even geographical distribution of weather-related hazards is now undergoing change that may increase the future hazard burden for humanity. As uncertainty increases, decisions at all scales – including that of local coping strategies – on when and how much to invest in disaster risk reduction measures become more difficult. Where advance warning is possible, as in the case of many volcanoes, preparedness measures in terms of evacuation can be extremely effective at little cost. For earthquakes there is usually no warning, yet the incorporation of seismic resistance into building design can add as little as 5-10 percent to construction costs and yield high returns in lives saved. More generally, there is scope for building resilience in the face of uncertainty based on the strengthening of fundamental capacities for coping and adaptation – human, social, financial, physical and environmental capital and the governance systems that facilitate their use.

#### *Exogenous and endogenous hazards*

59. A distinction is often made between hazards that are *exogenous* and *endogenous* to a society. This refers to the extent of their social origins and is relevant to that society's scope

<sup>15</sup> Very recent research suggests a degree of periodicity in volcanic eruptions, possibly associated with cyclical climatic change (Mason *et al.*, 2004).

for action to minimise the hazard. Hazards exogenous to one society can be endogenous to another or on a wider social scale. Many hazards such as industrial air or water pollution or floods cross international borders – for example the Mozambique floods of 2000 were exacerbated by the opening of upstream dams in neighbouring countries. ‘Natural’ hazards tend to be conceived as exogenous, but many are at least partly endogenous phenomena – they are the product of the joint evolution of coupled human and physical systems and so are partly rooted in historical and contemporary development planning. The *disasters* that result from them always have an endogenous element because they also reflect levels of vulnerability. Acknowledging this is an important step towards seeing development policy and practice as key contexts for disaster risk reduction.

### *Vulnerability and capacity, coping and adaptation*

60. There is an extensive literature on human vulnerability to disasters<sup>16</sup>. ‘Vulnerability’ tends to mean different things to different people, and is sometimes loosely defined in relation to different ‘vulnerable groups’ and their risk of outcomes such as destitution or famine. In a disasters context, ‘vulnerability’ is applicable only in relation to specific hazards or interactions thereof, and can be seen to have two basic elements: *exposure* and *susceptibility* to harm. Exposure is determined by where and how people live and work relative to a hazard. Susceptibility takes into account those social, economic, political, psychological and environmental variables that intervene in producing different impacts amongst people with similar levels of exposure.

61. The wide range of variables that determine both exposure and susceptibility for a person or group include many that are dynamic, such as rapid urbanisation, environmental degradation, market conditions or demographic change. These result from underlying socio-economic and political structural causes, and in turn produce a range of immediate ‘unsafe conditions’ such as living in dangerous locations or in poor housing, ill-health, political tensions or a lack of local institutions or preparedness measures.<sup>17</sup> Levels of vulnerability, and the relative importance of variables in producing vulnerability, therefore change over time. Many of these factors are rooted in changing local conditions, but the picture is incomplete without acknowledging the national and global socio-economic and political structures that constrain local development opportunities. This means that a coherent fight against vulnerability needs to take place at three scales: the local, national and international.

62. Vulnerability is often counter-posed with *capacity* to anticipate, cope with, resist and recover from hazard impacts<sup>18</sup>, and like vulnerability, capacity depends on social, economic, political, psychological, environmental and physical assets and the wider governance regimes. A number of different models exist to demonstrate the connections between assets, development contexts and disaster risk.<sup>19</sup> Though not primarily disaster-oriented, DFID’s Sustainable Livelihoods Framework has been influential in placing the household and its access to and management of assets at the centre of such analyses. The significance of such assets is related to the prevailing context of different vulnerabilities – including vulnerability to disaster shocks – and influenced by social and governance relations at different levels. Approaches vary, but the focus on these sets of factors mediating the success or otherwise of household strategies to sustain or improve livelihoods provides a useful framework for analysing how these outcomes are affected by hazard-vulnerability interactions. It can also show how these outcomes, which determine security of access to food, water, health, shelter, education, community participation and personal safety, feed back iteratively into new patterns of vulnerability, assets and social/governance relations.

63. Capacity to *cope* – the ability to use available resources to meet basic needs at times

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<sup>16</sup> For a recent review see Wisner *et al.* (2004)

<sup>17</sup> This is the basis of the ‘pressure and release model’ in Wisner *et al.* (2004)

<sup>18</sup> Twigg (2004)

<sup>19</sup> See for example: Wisner *et al.*’s (2004) Access model; CARE (2002) Livelihoods Framework

of adversity – affects capacity to recover thereafter, and subsequent levels of poverty and vulnerability. Coping strategies can be seen as short-run fall-back mechanisms whereby livelihood assets are called upon or ‘cashed in’ to enable households to respond to situations ranging from day-to-day challenges to extreme hazards or shocks, by reducing exposure or susceptibility and managing losses. Capacity to cope depends on adequate household assets and supportive social and governance relations.

64. Households in developing countries face a multitude of risks in their day-to-day activities<sup>20</sup>, some affecting specific individuals or households (e.g. accidents, illnesses, crime, loss of employment, debts or obligations being called in), others striking large groups of households or entire communities (natural hazard events, wars, epidemics etc). It is vulnerability to and coping strategies for these latter, shared risks that are of interest here. Patterns of use of coping strategies can sometimes provide useful indicators for an emerging disaster.

65. Closely related to coping is *adaptation*. Both are concerned with action taken by affected groups in response to hazard, but while coping capacities are attributes of livelihood or economic systems which enable losses to be absorbed, adaptation involves a permanent change in the systems themselves, usually driven by repeated exposure to hazard and/or to other longer term adverse trends which make those systems unviable, for example environmental degradation, climate change, socio-political tensions or poor governance. Adaptation, like coping, is rarely cost-free. The result may be new livelihood systems which are less productive or resilient than those they replace, as well as more so. The need for adaptive strategies in response to global climate change is now widely recognised.<sup>21</sup>

### Resilience

66. *Resilience* refers to the ability to absorb and recover from hazard impacts. For many analysts it is the opposite of vulnerability (and thus much the same as capacity), though others make the useful distinction between capacities as attributes of individuals and households, and resilience which also includes a favourable institutional environment. From this latter perspective, resilience is the coming together of such capacities with the social, institutional and informational resources that enable their effective use. Early warning systems and community health or disaster preparedness groups play critical roles in providing the information and fostering conditions for social learning that can then enable coping and adaptation and so boost resilience.

### Poverty and vulnerability: links and differences

67. DFID’s core mission is to reduce poverty. Poverty is understood to be multidimensional – indicated primarily by economic status, but incorporating inadequate access to education and health care, housing and infrastructure such as drinking water and sanitation, and exclusion from political decision-making.<sup>22</sup> Vulnerability to hazard overlaps with poverty, but this overlap is generally not complete. For example, in favourable times pastoralists in many parts of Africa may be relatively well-off, in terms of assets and income, compared with crop-dependent smallholders and many urban dwellers. But those (on the hoof) assets and the income that derives from them are highly vulnerable to drought, disease and conflict, and when losses are heavy herd recovery can be difficult. Likewise, the 17,000 who died in the 1999 Izmit earthquake in Turkey were not made vulnerable as a direct outcome of poverty. Most were from middle-income households living in recently constructed high-rise flats. Though these were built in the formal construction sector, legal standards for earthquake resistance were widely ignored during the 1990s construction boom leading to building failure. Here poverty contributed to vulnerability, as a pressure for keeping construction costs

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<sup>20</sup> Dercon (2002); Morduch (1995)

<sup>21</sup> IPCC (2001), DFID (2004c)

<sup>22</sup> DFID (2000)

low and undermining the regulation of urban construction standards, but the institutions of urban governance were the most immediate cause of losses.

68. Yet while poverty and vulnerability are not the same thing, it is true that they are highly correlated. Poorer people are generally both more exposed and more susceptible to hazards, suffer greater relative loss of assets, and have a much lower capacity to cope and recover. While the better-off may choose to live in high risk areas, the poor often have no other choice. Furthermore, disasters can induce poverty, so that better-off people can be made poorer and the poor destitute through their vulnerability to disaster and inability to avoid impacts.

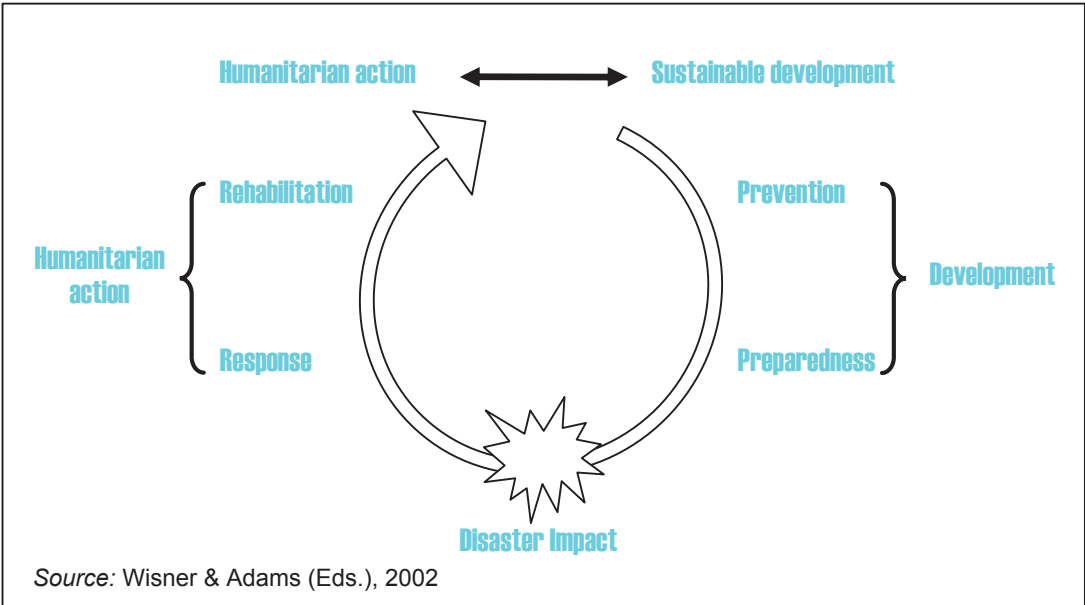
69. In policy terms this means that poverty reduction can help reduce disaster risk, but this requires an active focus on disaster issues to be built into poverty reduction programmes. While poverty reduction measures help to support livelihoods, disaster risk reduction adds value to this work by protecting livelihoods from and boosting their capacity to cope with specific hazard impacts, thus helping to make them sustainable. Moreover, risk reduction efforts which include the less poor can further the goal of poverty reduction by helping the better-off to avoid impoverishment through disaster impacts. At the same time disaster risk reduction also demands attention within broader development processes, including efforts to support good governance. In a climate where corruption is minimised, for example, politicians are less likely to be complicit in or tolerant of town planning or building practices which are likely to heighten vulnerability to disasters.

**‘The disaster management cycle’**

70. The ‘disaster management cycle’ (Figure 1) is a normative model of appropriate programming interventions at sequential stages in the unfolding of a disaster event. Its purpose is to show that disaster impacts can be lessened by prior prevention and preparedness measures which are essentially development activities, while humanitarian response in the wake of a disaster should be followed by rehabilitation activities aimed at easing the transition back into development.

71. The disaster cycle is a much-used organising concept in policy and programming for hazard-prone areas. Yet it has been criticised on a number of counts. Elements are arranged in a linear sequence, when in practice they often need to coincide, especially where disasters are protracted processes (as in many complex political emergencies and slow onset disasters) rather than events in time. More fundamentally, the idea of a ‘disaster cycle’

**Figure 1: The disaster management cycle**



appears inherently to discount successful prevention and preparedness, and where a disaster has not been avoided it suggests a return to some notion of 'normality' represented by the pre-disaster situation – when more often than not it was that situation which contained the potential for disaster in the first place, and/or the disaster impact itself precludes any return to what was there before. A more positive concept might therefore be a 'risk management cycle', or better still a spiral, as learning from a disaster event can stimulate adaptation and modification in development planning rather than a simple reconstruction of pre-existing social and physical conditions.

72. Having learnt from one disaster does not guarantee security in the next event, particularly in an era of globalisation when climate change and rapid social and environmental changes linked to urbanisation, conflict, disease, trade and aid are underway and have cross-border dimensions and impacts. As we saw above a single large-scale disaster may be better viewed as a number of related small and medium sized disasters. This means that within a single disaster various places and sectors will find themselves at different stages of the cycle at the same time, perhaps even backsliding.

73. Despite these drawbacks, the disaster cycle model has the distinct merit of highlighting development responsibilities in relation to disasters, as well as the need for post-disaster rehabilitation as a link to development. A much debated aspect of efforts to operationalise the disaster cycle idea is the progression from humanitarian to development programming – i.e. that of '*linking relief, rehabilitation and development*'. This again tends to reinforce the pessimistic view that risk awareness and management *only* proceeds from disaster circumstances, which is contrary to the position taken in this study. Yet the logic of 'saving livelihoods as well as lives' has much appeal in terms of helping people retain or regain assets and institutions required to pursue their livelihoods with dignity when disasters strike, and many humanitarian agencies now engage in livelihoods programming as well as basic humanitarian assistance.

74. However, uncertainty remains – in 'natural' disasters and even more so in complex emergencies – over the conditions under which it is appropriate to complement basic humanitarian assistance with rehabilitative or developmental interventions, and over how the humanitarian and development sides relate to each other. The concern is not only about consequences for beneficiary groups but also in terms of the transition between different providing agencies and funding mechanisms (a point taken up in Section 4) and how they compliment each other.



### 3. Why should disasters be a development concern?

#### Section 3 summary

Section 3 explores the two-way linkages between development planning and disaster. It starts by examining disaster impacts on development – undermining efforts to meet the Millennium Development Goals and impacting on macro-economic systems and on household livelihoods and human development.

It then considers how failures of development can create risk through increasing peoples' exposure and susceptibility to natural hazards, reducing the effectiveness of established coping strategies and by generating new hazards. Poorly planned attempts to reduce risk and some responses to actual disasters can also lead to the generation of new hazards and vulnerabilities.

Finally, the potential gains from incorporating disaster risk reduction into development policy and planning are spelt out in terms of turning 'vicious spirals' of failed development and disaster risk into 'virtuous spirals' of development and risk reduction, then focussing on the contribution this might make towards attaining the MDGs and its cost-effectiveness.

#### 3.1 Disasters hold back development

##### *Disasters undermine efforts to achieve the Millennium Development Goals*

75. Disasters impact on all aspects of development, undermining efforts to achieve the MDGs. Their pervasive influence comes about because impacts are felt both directly (for example through the loss of lives, livelihoods and infrastructure) and indirectly (for example through the diversion of funds from development to emergency relief and reconstruction, or wider effects on economy and society). This means that disasters not only threaten MDGs concerned with poverty, hunger, health and environmental status but also those pushing for improved gender equality and wider access to education. Table 2 below provides examples of direct and indirect impacts of disasters on efforts to meet the MDGs.

76. Perhaps the most far-reaching influence of disasters is on MDG1, which has the twin goals of halving between 1990 and 2015 the proportion of people whose income is less than US\$ 1 a day and the proportion of people who suffer from hunger. This is also a priority MDG for DFID, whose primary concern is with fighting poverty. In their global review of progress towards meeting the MDGs, UNDP cites climatic shocks and 'natural' disasters along with epidemic diseases, barriers to international markets and high debt levels as structural constraints in meeting MDG1.<sup>23</sup>

77. The influence of disasters on meeting MDG1 is frequently noted in national progress reports on the MDGs<sup>24</sup>. For example, China's MDG report cites 'natural disasters' as one of eight key pressures undermining success at meeting MDG1 and directly links disaster risk reduction and poverty alleviation policy. In Nepal, poverty and hunger are tied to the sudden loss of agricultural land through flooding and landslides. In Afghanistan, drought in the 1990s is identified as contributing to worsening food security and poverty in the current decade. Drought in Tanzania and flooding in Mozambique are cited as part causes for continuing high levels of rural poverty in these countries.

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<sup>23</sup> UNDP (2003)

<sup>24</sup> <http://www.undp.org/mdg/countryreports.html>



**Table 2: Examples of disaster impacts on efforts to meet the MDGs**

MDG	Direct impacts	Indirect impacts
<b>1. Eradicate extreme poverty and hunger</b>	<ul style="list-style-type: none"> <li>• Damage to housing, service infrastructure, savings, productive assets and human losses reduce livelihood sustainability.</li> </ul>	<ul style="list-style-type: none"> <li>• Negative macroeconomic impacts including severe short-term fiscal impacts and wider, longer-term impacts on growth, development and poverty reduction.</li> <li>• Forced sale of productive assets by vulnerable households pushes many into long-term poverty and increases inequality.</li> </ul>
<b>2. Achieve universal primary education</b>	<ul style="list-style-type: none"> <li>• Damage to education infrastructure.</li> <li>• Population displacement interrupts schooling.</li> </ul>	<ul style="list-style-type: none"> <li>• Increased need for child labour for household work, especially for girls.</li> <li>• Reduced household assets make schooling less affordable, girls probably affected most.</li> </ul>
<b>3. Promote gender equality and empower women</b>	<ul style="list-style-type: none"> <li>• As men migrate to seek alternative work, women/girls bear an increased burden of care.</li> <li>• Women often bear the brunt of distress 'coping' strategies, e.g. by reducing food intake.</li> </ul>	<ul style="list-style-type: none"> <li>• Emergency programmes may reinforce power structures which marginalise women.</li> <li>• Domestic and sexual violence may rise in the wake of a disaster.<sup>25</sup></li> </ul>
<b>4. Reduce child mortality</b>	<ul style="list-style-type: none"> <li>• Children are often most at risk, e.g. of drowning in floods.</li> <li>• Damage to health and water &amp; sanitation infrastructure.</li> <li>• Injury and illness from disaster weakens children's immune systems.</li> </ul>	<ul style="list-style-type: none"> <li>• Increased numbers of orphaned, abandoned and homeless children.</li> <li>• Household asset depletion makes clean water, food and medicine less affordable.</li> </ul>
<b>5. Improve maternal health</b>	<ul style="list-style-type: none"> <li>• Pregnant women are often at high risk from death/injury in disasters</li> <li>• Damage to health infrastructure.</li> <li>• Injury and illness from disaster can weaken women's health.</li> </ul>	<ul style="list-style-type: none"> <li>• Increased responsibilities and workloads create stress for surviving mothers.</li> <li>• Household asset depletion makes clean water, food and medicine less affordable.</li> </ul>
<b>6. Combat HIV/AIDS, malaria and other diseases</b>	<ul style="list-style-type: none"> <li>• Poor health &amp; nutrition following disasters weakens immunity.</li> <li>• Damage to health infrastructure.</li> <li>• Increased respiratory diseases associated with damp, dust and air pollution linked to disaster.</li> </ul>	<ul style="list-style-type: none"> <li>• Increased risk from communicative and vector borne diseases, e.g. malaria and diarrhoeal diseases following floods.</li> <li>• Impoverishment and displacement following disaster can increase exposure to disease, including HIV/AIDS, and disrupt health care.</li> </ul>
<b>7. Ensure environmental sustainability</b>	<ul style="list-style-type: none"> <li>• Damage to key environmental resources and exacerbation of soil erosion or deforestation.</li> <li>• Damage to water management and other urban infrastructure.</li> <li>• Slum dwellers/people in temporary settlements often heavily affected.</li> </ul>	<ul style="list-style-type: none"> <li>• Disaster-induced migration to urban areas and damage to urban infrastructure increase the number of slum dwellers without access to basic services and exacerbate poverty.</li> </ul>
<b>8. Develop a global partnership for development</b>	<ul style="list-style-type: none"> <li>• Impacts on programmes for small island developing states from tropical storms, tsunamis etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts on commitment to good governance, development and poverty reduction—nationally and internationally.</li> </ul>
<b>ALL MDGS</b>		<ul style="list-style-type: none"> <li>• Reallocation of resources – including ODA – from development to relief and recovery.</li> </ul>

<sup>25</sup> Though data are scarce, a number of studies suggesting a surge in domestic and sexual violence against women in the wake of disasters are cited in, for example, PAHO (2004), EIIP (1998), Wisner *et al.* (2004:16), possibly resulting from heightened intra-household tensions.

78. Numbers below poverty thresholds increase following a disaster. In Ecuador, climatic effects of El Niño in 1997-1998, in combination with an oil shock, increased the headcount poverty rate from 34 percent in 1995 to 46 percent in 1998. In Honduras, where there was widespread loss in agricultural output following Hurricane Mitch in October 1998, the poverty rate increased from 43 to 46 percent but more so for rural households. In the Dominican Republic, headcount poverty increased from 36 to 40 percent after a combination of drought and terms-of-trade shocks in 1990.<sup>26</sup>

79. But progress on the MDGs provides only a partial view of the impact of disasters on development. National level success can hide sub-national inequality and vulnerability. In large countries experiencing rapid national economic growth such as China and India, acute local or regional poverty and disaster losses can become invisible at the national level. Vulnerability can also be hidden in poorer countries such as Burkina Faso, where sharp contrasts exist between the wetter, productive west and the drought-prone east of the country.<sup>27</sup> Work on developing sub-national indicators for the MDGs and for natural disaster impacts will help reveal a fuller picture of risk and development.

80. In addition, the time-span for assessing disaster impacts on MDGs has so far been short. Comparing progress from 1990 to 2004 is likely to capture the influence of seasonal flooding or drought but that of typhoons and hurricanes, earthquakes and volcanoes, with their lower frequency within individual countries, may be overlooked. A more reliable assessment for such disasters may emerge as 2015 approaches.

### Macroeconomic impacts of disasters

81. In a study for the World Bank of the economic and financial impacts of 'natural' disasters, Benson and Clay have shown that major 'natural' disasters not only have severe short-term macroeconomic impacts but also appear to have negative – if less easily measurable – longer-term consequences for economic growth, development and poverty reduction.<sup>28</sup> Methodological challenges have made going beyond an assessment of direct impacts difficult (Box 3). This has had the effect of downplaying the total economic impact of disaster as reported in official assessments.

82. Box 4 illustrates the extent of such impacts in the case of the August 1999 earthquake in Turkey. Small national economies are often hit the hardest – Antigua lost the equivalent of 66% of its GDP to Hurricane Luis in 1995. Disasters can affect public finances in the short run, as government revenues from tax collection fall with a decline in economic activity coupled with additional government expenditure on disaster assistance and infrastructure or housing reconstruction. In an IMF study of disaster in Cambodia (drought/flood, 1994), Honduras (hurricane, 1998), Zimbabwe (drought, 1992), disaster impacts were associated with deterioration in fiscal accounts and in the external trade balance (with loss of export earnings and higher imports of food and reconstruction material).<sup>29</sup>

83. Disasters exacerbate poverty through a range of macroeconomic mechanisms. Added to direct effects of destruction of assets and loss of income, the poor are disproportionately affected by fiscal impacts involving cuts in social spending and by post-disaster inflation – especially in food prices following drought or flood. In Fiji a 6.8% increase in annual food prices was attributed to the 1993 Cyclone Kina<sup>30</sup>, while in Zimbabwe the 1991/92 drought led to a jump in inflation to 46 percent and food price inflation to 72 percent by the end of 1992<sup>31</sup>. The disproportionate effect of shocks on the poor may partly explain the asymmetric effect

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<sup>26</sup> IMF (2003:66)

<sup>27</sup> UNDP (2003)

<sup>28</sup> Benson and Clay (2004)

<sup>29</sup> IMF (*op. cit.*)

<sup>30</sup> Benson (1997)

<sup>31</sup> IMF (*op. cit.*)

### Box 3: Assessing macro-economic impacts of disaster

In addition to **direct impacts** (physical damage to infrastructure, productive capital and stocks), disasters cause **indirect costs** and **secondary effects**. Indirect costs accrue when productive output is reduced because of damaged assets and infrastructure or a workforce weakened by disaster losses. Secondary effects include longer-term consequences for the economy, for example levels of household and national indebtedness, fiscal and monetary performance or the effects of relocating or restructuring elements of the economy or workforce or resettling populations.

Indirect and secondary losses can be seen in the 1991-92 drought in Zimbabwe where the manufacturing sector was hit by reduced hydroelectric output. Combined manufacturing and agricultural losses reduced 1992/93 GDP by 8 percent. Similarly, flooding in South Africa in 1999/2000 depressed agricultural productivity by 18 percent for the first quarter of 2000<sup>33</sup>. Evidence from the Philippines demonstrates the interconnectedness of natural disaster shocks with other development pressures. Here 1990s annual GNP growth peaked at 7.2 percent in 1996, but in the following year the Asian financial crisis brought a reduced growth rate of 5.3 percent, and in 1998 the combination of the after-effects of this crisis and an El Niño event led to a dramatic decline in GDP growth to just 0.4 percent - the lowest for the decade. Citing evidence from 16 Latin American and Caribbean countries, the IMF estimates that one percentage point of GDP in direct damage from 'natural' disasters can reduce GDP growth by half a percentage point in the same year.

Ongoing research supported by the World Bank, ProVention Consortium and the UN Economic Commission for Latin America and the Caribbean (ECLAC) has begun to unpack some of the complex relationships between natural disaster shocks and macro-economic status. ECLAC has played a lead role in developing and applying assessment tools for these three categories of macro-economic impact.<sup>34</sup> Applying this framework ECLAC finds that Latin America and the Caribbean have accumulated over US\$ 65 billion in damages from disasters, with smaller, less developed countries in the Caribbean, Central America and Andes disproportionately affected.

Sources: Benson & Clay (2004); UN-ECLAC (2003), IMF (2003)

that fluctuations in economic growth are observed to have on poverty, such that a fall in growth tends to increase poverty by more than an equivalent increase in growth reduces it.<sup>32</sup>

#### Reallocation of resources from development to emergency assistance

84. The capacity of a country to cover the demand for disaster related expenditure is influenced through disaster funds, insurance or access to emergency aid. However, governments' primary fiscal response is reallocation, especially from capital and social expenditure. Similarly, disasters appear to have little impact on overall external aid flows because donors reallocate resources within existing commitments.

85. For example, the adverse balance of payments and fiscal impacts in Cambodia, Honduras and Zimbabwe found in the aforementioned IMF study can be expected significantly to have limited the scope for government investment in development. With respect to external aid, this same study suggests that

'[t]he overall provision of external development assistance is not at present very elastic or flexible in response to shocks'<sup>35</sup>

and cautions that assistance to mitigate short-term effects of crises can reinforce vulnerability if it diverts resources away from long-term investment and risk mitigation.

86. Likewise, Benson and Clay show that disaster impacts may be much greater than first apparent because of budgetary reallocations for relief and rehabilitation, the brunt of which

<sup>32</sup> *Ibid.*: 67

<sup>33</sup> Ailsa Holloway, Disaster Mitigation for Sustainable Livelihoods Programme, University of Cape Town (personal communication)

<sup>34</sup> This has culminated in the 2003 publication of ECLAC's handbook for *Estimating the Socio-Economic and Environmental Effects of Disasters*.

<sup>35</sup> IMF (*op. cit.*:4)

#### Box 4: Macroeconomic impacts of the August 1999 Turkish earthquake

The earthquake which struck Turkey on 17 August 1999 was centred in the country's most industrialised and economically dynamic area. The four districts most severely affected (Kocaeli, Sakarya, Bolu and Yalova) contribute over seven percent of the country's GDP and 14 percent of industrial value added. Per capita income is almost double the national average. Though containing only four percent of the nation's population, the region contributes over 16 percent of budget revenues.

With the impacts of the earthquake compounding the effects of the global financial crisis, Turkey suffered a severe recession that year with a real GDP decline of 6.1 percent. The OECD put the direct output loss from the earthquakes at half to one percent of GDP. The aggregate economic loss has been put at US\$ 16 billion (about seven percent of GDP), much of this attributable to a decline in economic activity both in the earthquake zone and in the immediately surrounding districts (Bursa, Eskisehir, and Istanbul) economically linked to it. Impact on the public finances was significant, with direct fiscal costs totalling one percent of GNP in 1999 and two percent in 2000, and a decline in 1999-2000 revenue of around half a percent of GNP.

These estimates suggest that the macroeconomic impact of the earthquake was substantial, and the destruction of both physical and human capital may have had a long term negative effect on the country's economic growth prospects.

Source: Erdik (2000); OECD (2001)

fall primarily on capital expenditure. This is demonstrated for Bangladesh, Dominica, Fiji, Malawi and Zimbabwe. In the case of Bangladesh and Dominica, external development assistance was also affected due to consequent government inability to meet local counterpart funding commitments. For these latter two countries and for Malawi, all highly dependent on external aid for development,

[t]he available data suggest that disasters have little impact on trends in aid flows in these countries. Many donors appear to respond to disaster crises by reallocating resources and bringing forward commitments under existing multiyear country programs and budget envelopes. ...[D]evelopment spending, which is largely aid supported, tends to fall as aid and counterpart local funds are shifted to emergency assistance. The reallocated resources are typically not made good subsequently; instead, aid commitments fall back after the crisis, with total aid receipts in line with longer-term trends.<sup>36</sup>

#### Disaster impact on communities and livelihoods

87. The role of natural hazards in shaping the multiple and changing risks to communities and livelihoods is as difficult to isolate as their macroeconomic impacts, perhaps more so given the wide diversity of livelihoods in most countries and their social and environmental determinants. A wide variety of methodologies are in use, some 'top-down' and aggregate such as UNDP's Disaster Risk Index<sup>37</sup> comparing relative national vulnerabilities to drought, flood, tropical storm and earthquake; others 'bottom-up', field-based and aimed at diagnosis of problems or verifying observations with local knowledge, such as IFRC's Vulnerability and Capacity Analysis. Still others attempt to match the needs of planners with the context-specific nature of vulnerability, such as the vulnerability analysis and mapping methods of the World Food Programme or World Health Organisation.

88. Combining these assessment methodologies with the livelihoods-focussed approaches noted earlier, numerous studies identify processes of decline whereby sequences of increasingly desperate coping strategies fail in succession. Adger, for example, has identified a three-stage process of collapse in coping strategies as assets are eroded by subsequent disaster impacts. The first stage involves the use of insurance mechanisms (selling jewellery

<sup>36</sup> Benson and Clay (*op. cit.*:35)

<sup>37</sup> Reported in UNDP (2004), this uses disaster and socio-economic data from 1980 to 2000 filtered through a GIS system.

or taking loans) to offset disaster impacts; the second is reached when households are forced to sell off key productive assets (land, livestock or housing rights) to survive; a final stage is reached when households are forced to break up, with individuals joining other households, becoming destitute or undertaking distress migration.<sup>38</sup>

89. A well-established finding is that when households are exposed to repeated shocks with insufficient time for assets to fully recover in the intervening periods, there is a 'ratchet effect' leading to exhaustion of available coping strategies, including those involving resources and institutions in the community which might provide forms of social protection. This either necessitates adaptation to a new livelihood strategy which may be less productive, less culturally acceptable or riskier, or destitution – in either case recovery can be very difficult. Thus frequent hazards affecting whole communities can turn into conditions of chronic crisis or seemingly permanent disaster. This has been demonstrated in Ethiopia<sup>39</sup> where around seven million people are chronically food insecure and depend on assistance even in years with good rainfall. In 2003 drought inflated numbers in need to 14 million, and perhaps half a million of these will have been unable to recover.<sup>40</sup>

90. Disasters impact household members differently, often affecting children and the elderly most. In Zimbabwe, children aged 12–24 months lost an average of 1.5–2.0 centimetres of linear growth in the aftermath of the 1994–1995 drought. The impact was the most severe among the poorest households with few livestock. As Box 5 illustrates, children of poor households were disproportionately vulnerable to recent floods in Vietnam. Female-headed households also tend to fare worse than male-headed ones following a disaster, in part because they have a smaller average resource base.<sup>41</sup>

#### Box 5: Child mortality in floods in Vietnam

In recent years, annual flooding in the Mekong Delta of Vietnam has claimed hundreds of lives, the vast majority of which have been young children. The worst year was 2000, when 400 children died, closely followed by over 300 child deaths in 2001. In 2002, 99 children died – out of a total death toll in the Delta of 106. A study coordinated by Save the Children reported that most deaths were among children aged under six from poor families. Though infants may be at special risk from fast-rising floods and strong currents, many such children died not during the onset of flooding but when floodwaters were well established. According to the study, many victims were from small households and had been left at home without adequate supervision for long periods while parents were earning a livelihood from fishing.

The Save the Children study called for a more accessible and affordable system of kindergartens for pre-school aged children. Indeed, from 2002 onward the Government of Vietnam has started to establish emergency 'flood kindergartens' in the Mekong Delta, where parents can leave young children in safety while they concentrate on securing houses, possessions and livelihoods. Independent assessment of the effectiveness and usage of these centres is not yet available. However, the Government claims that the 918 emergency kindergartens set up during the severe floods of 2002 drastically reduced the number of children who drowned that year.

Source: UNICEF (2002); Tinh (2003); SC-UK (2003)

91. The impacts of HIV/AIDS and protracted conflict have been dramatically to accelerate the collapse of household coping strategies as key income earners fall ill or die. Moreover at high levels of impact HIV/AIDS, like conflict, can also result in the unravelling of community and governance structures. The coming together of HIV/AIDS, endemic social and political violence and poor governance with disaster risk has created a pernicious cocktail of pressures which increasingly overwhelm household coping capacities, especially in Africa.

<sup>38</sup> Adger (1996)

<sup>39</sup> For example by Sharp *et al.* (2003)

<sup>40</sup> Joanna Raisin, Food Security Adviser, DFID Addis Ababa (personal communication)

<sup>41</sup> World Bank (2001)



While initially this may encourage the activation of social networks and drawing on social capital within the local community, the eventual collapse of such informal safety nets when whole communities are affected leaves households to survive on their own. The need for donor intervention that incorporates disaster risk reduction into development policy is writ large in this region, underlining the need for a multi-hazard approach to risk rather than focusing on hazards individually.

## 3.2 Disasters are rooted in development failures

### *Dominant development models and risk*

92. Bilateral and multilateral donor agencies are part of a system of global governance that has attracted criticism for failing to respond adequately to challenges of globalisation, as evidenced by deepening inequality between and within countries and a range of negative outcomes for those at the global margins. Such outcomes include weak economic growth, financial instability, persistent debt, falling real wages, rising numbers in income poverty, inadequate social provision and democratic and human rights failings. Anticipated failure to meet several of the MDGs has been associated with development models which place too much faith in the ability of unregulated markets to create favourable conditions for human development, pressure for reduction in state functions, an unfair global trading system which allows export 'dumping' and barriers to market access to persist, and inadequate and shrinking development assistance often deployed in the interests of donor countries.<sup>42</sup>

93. This global imbalance is the context in which progress in addressing the exposure and susceptibility of poor countries and poor people in them to natural hazards appears to have lost momentum in many parts of the world. There have been notable successes, for example in China, India and the former Soviet Union where famine on the scale seen during the first six decades of the 20<sup>th</sup> century has been prevented. But national comparisons of vulnerability provide evidence of linkages between global structures for trade, aid and debt and the distribution of disaster losses.<sup>43</sup> Losers include agriculturalists in Africa who are unable to access North American and European markets, the rapidly rising numbers of urban poor, those forced out of work by trade liberalisation or into exploitative relationships with global capital, or indigenous peoples in danger of losing their cultural heritage.

94. Initiatives promising a new international institutional architecture addressing broader human development concerns and reducing risk are not always seen as convincing, particularly given the limited contribution of 'corporate social responsibility', for example in investing in making public infrastructure or workers' houses secure, or genuinely addressing environmental concerns.<sup>44</sup> The Inter-American Development Bank, for example, is providing the financial framework for a massive regional project – Plan Puebla Panama (PPP) – as the foundation for a Free Trade Area of the Americas, opening up the southern half of Mexico and Central America to private foreign investment. One of eight components in the PPP, the Mesoamerican Initiative for Disaster Prevention and Mitigation, was included to assuage fears that the project will further exacerbate environmental degradation and disaster risk through land alienations, unregulated extraction of primary products and rapid growth of urban slums. Nevertheless, these concerns persist among the many civil society groups in the region opposed to the project.

95. The post-Cold War era has also seen a flourishing in formal and informal patterns of trade in arms and primary commodities such as diamonds, gold and coltan\* which fuel or sustain conflicts. Box 6 shows some of many links between conflict and 'natural' disasters.

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<sup>42</sup> WCSDG (2004); UNRISD (2000)

<sup>43</sup> E.g. UNDP (2004); Wisner *et al.* (2004)

<sup>44</sup> Twigg (2001)

\* Columbite-Tantalite; a metallic ore used in the electronics industry



### Box 6: Armed conflict and disaster risk

In 2002 violence and armed conflict led to approximately 22 million international refugees and another 20 to 25 million internally displaced people. The social disruption and dislocation of governance systems caused by armed conflict and high levels of social violence (for example in urban neighbourhoods dominated by drugs gangs) influences the capacity of households and communities to withstand natural hazard and to recover from disaster. The Horn of Africa is one region in which food insecurity and famine has been particularly associated with potent mixes of conflicts and drought over the last 30 years. In the last five years at least 140 'natural' disasters have occurred in countries experiencing complex political emergencies.<sup>45</sup>

People displaced by conflict often add to the swelling populations of urban informal settlements, or find themselves in refugee camps. Lack of adequate livelihood resources in these new settlements can magnify risk as the immediate environment is exploited for resources such as firewood leading to soil loss and potentially increasing flood or landslide hazard. Inside camps and informal settlements high density living increases exposure to disease.

The disruption or absence of government functions or diversion of public expenditure during periods of conflict can have an erosive effect on disaster risk capacity. The January 2002 volcanic eruption of Mount Nyiragongo in Goma, Democratic Republic of Congo, was predicted by a local geologist, but with no state capacity to act on this information no warning or preparedness measures were taken, and almost half of the city was destroyed.

Disaster can also play a role in generating social instability and political change. The collapse of the Somoza regime in Nicaragua, the undermining of community level organisations in Chile and political change in Ethiopia and Afghanistan have all been associated with social tensions catalysed during moments of disaster stress. On the ground it is often difficult to separate out the cause and effect relationships between natural disaster, social instability or inequality and conflict or political crisis.

### *Development can lead to disaster*

#### *By increasing exposure to hazard*

96. Some of the best known examples of development increasing exposure to hazard relate to the creation of new 'technological' hazards, for example involving industrial pollution or accidents. While these are not a central focus of this study, the potential for such hazards and other development activities to cause environmental change, which in turn exacerbates natural hazards, is important to note. At the global scale, atmospheric pollution involving carbon dioxide and other 'greenhouse' gases is now recognised as a major factor contributing to climate change, with the resulting prospect of weather-related hazards such as tropical storms and drought growing in frequency and severity and sea level rise increasing human exposure (Box 7).

97. At the other end of the scale, local development initiatives can also increase exposure. The clearing of protective mangrove stands for shrimp farming in Bangladesh and Vietnam has increased exposure to storm damage as well as generating pollution. The widespread deforestation of hill-slopes has increased the likelihood of landslides. These contributed substantially to deaths in Hurricane Mitch, for example, as well as on a more regular basis in densely settled mountain environments such as in Nepal. At intermediate scales human-induced environmental change involving land degradation, deforestation or desertification is responsible for a range of processes which increase vulnerability to natural hazards such as drought or flooding, as well as generating new hazards. When highly mobile pastoralists in the Sahel were encouraged to settle following drought episodes in the 1970s and 1980s, this led to over-exploitation of local water resources and land degradation.<sup>46</sup>

98. When development does not take into account existing hazards it is likely to generate additional exposure to disaster risk. This is often a feature of rapid urbanisation (Box 8).

<sup>45</sup> Buchanan-Smith and Christoplos (2004)

<sup>46</sup> Adams (1990)

### Box 7: Adapting to climate change

It is widely agreed by the scientific community that climate change is already a reality, and likely to bring an increase in the frequency and severity of weather-related disasters. When seasonal change and climatic extremes overlap the results can be catastrophic, as demonstrated in 2003 when heatwaves killed 2000 in India and as many as 20,000 across Europe.

Climate change will hit the poor hardest. The greatest impacts of climate change are likely to be on food security, the productivity of agricultural export crops, human health, water security and quality, and through the displacement of people as a result of flooding, drought or sea-level rise. In Africa, sea-level rise alone is estimated to increase those at risk from flooding from 1 million to 70 million by 2080. In India, where water tables are already falling rapidly in many areas due to overexploitation of groundwater, a temperature rise of 2°C could lower yields of wheat and rice by 10%, adding to the effect of increased rainfall variability.

The slow pace of the UN Framework Convention on Climate Change negotiations means that adaptation measures need to proceed alongside ongoing plans for climate change mitigation. Action is required to reduce the likely human impact of changes in climate as well as to reduce the process of change itself. Indeed, there are opportunities for combined adaptation/mitigation projects, such as the (re-)establishment of mangrove forests in high-risk, low-lying coastal areas. This is adaptive in reducing exposure to flooding and storm surge, as well as being mitigative through tree growth acting as a carbon sink.

Adapting to climate change will mean adjustments to risk bearing and sharing between individuals, civil society and the State, and will not depend solely on international action in this area. Such action needs to be part of a broader development policy focus to support the adaptive capacity and resilience of vulnerable communities.

Climate change adds weight to the argument for integrating risk reduction into development. Where risks are known to be high, for example on floodplains or low-lying coasts, existing disaster risk reduction programmes should be expanded. Elsewhere, uncertainty increases the need for precautionary development that takes disaster risk into account. The Netherlands Red Cross Climate Change Centre has built on disaster risk reduction tools to offer guidance for national societies on local adaptation to reduce climate change risks. DFID has also recently produced a collection of key sheets which demonstrate how climate change increases environmental risk for the poorest, putting the MDGs at risk.

*Source:* UNEP (2002); Sinha and Swaminathan (1991); Netherlands Red Cross (2003); DFID (2004c); Adger *et al.* (2003)

Many losses in urban disasters are not caused by the initial shock but by secondary releases from or fires/explosions in industrial units. In metropolitan Calcutta and Baroda, the Asian Urban Disaster Mitigation Programme has identified numerous manufacturing and hazardous materials storage sites that magnify risk in these densely populated urban areas. The programme aims to carry out hazard mapping and vulnerability assessment in selected municipalities, and develop guidelines for incorporating technological hazards into urban planning. In a second phase, a full-scale mitigation strategy and off-site emergency preparedness plan will be prepared and implemented for one of the cities.<sup>47</sup>

#### *By increasing susceptibility*

99. Disaster risk can also be increased when people's capacity to cope with hazards or recover from disaster is undermined by development policy. Box 9 examines these processes in small island developing states. Structural adjustment in Guyana in the 1990s created a new class of urban poor households whose livelihoods in the public sector had been lost. While many households had previously been exposed to frequent low magnitude urban flood events, the inability of households to substitute resources for those lost from restructuring led to increased susceptibility to the health impacts of these floods. By 1993, intestinal infectious diseases accounted for 25% of the high infant mortality rates, which stood at 73 per 1,000.<sup>48</sup>

<sup>47</sup> Asian Disaster Preparedness Center ([www.adpc.net/audmp/India.html](http://www.adpc.net/audmp/India.html))

### Box 8: Vicious cycles of urban risk

Rapid urbanisation in the 1990s and beyond has dramatically increased the numbers of people and scale of physical assets exposed to hazards (particularly earthquakes and flooding) because of inadequate urban land-use planning and construction standards. There are large numbers of urban residents living below poverty lines and close to the point of household collapse in cities of middle and low developed countries – often more than 50% of a city's population. The dependence of urban livelihoods on a money economy and reliance on infrastructure networks to deliver basic needs also heightens the susceptibility to disaster.

The high density of urban slums magnifies the number of people and assets at risk from any one event. In the densely populated Delhi slum of Yamuna Pushta, a single small fire quickly ran out of control and destroyed 2,000 squatter homes in November 2002. The inability of Cape Town municipality to support secure low-income living conditions contributed to over 10,000 informally constructed homes being destroyed by fire from 1995 to 1999.

Not only the poor are affected. In the January 2001 earthquake in Gujarat, India, poor planning and failure to enforce building codes in a rapidly urbanising area were directly responsible for unsafe buildings which claimed 20,000 lives from all strata of society. Where wealth counted most was in ability to recover: those with assets and influence were able to secure housing in new locations and benefit most from rehabilitation assistance.

In worst-case scenarios such disasters are followed by inappropriate or partial recovery that only reproduces the socio-economic vulnerability for future disaster loss. Following urban disasters it is commonplace for residential areas to be re-developed either formally or informally on the same hazardous sites. In Rio de Janeiro, landslides caused 1000 deaths during storms in 1966, rising to 1700 in 1967 because of the redevelopment of hazard sites. For low income countries and regions, breaking out of such negative cycles may prove decisive in striving for sustainable poverty reduction.

*Source:* DMSLP (2004); Wisner *et al.* (2004); Pelling (2003); Alexander (1989)

### Box 9: Cultural change and vulnerability in small island states

Local knowledge needed to operationalise coping and adaptive responses may be lost or become irrelevant following social change. This process has been observed in Fiji, with signs of dependence on food assistance from state and NGO sources replacing traditional coping measures such as the consumption of uprooted tubers. Similarly, there is evidence that rich and varied agroforestry systems of long standing in the Pacific islands are threatened by agricultural modernisation.

Coping strategies are further structured by the extent to which claims to customary rights from marginalised individuals are recognised. This 'moral economy' is susceptible to erosion by the extension of the market and the privatisation of communal resources, the penetration of the state into traditional social relations so that formal welfare replaces indigenous reciprocity and support systems, and population growth. In Western Samoa, for example, traditional coping mechanisms and agricultural practices have been undermined by the enhanced role of the market.

But not all change is bad! Customary interpretations of disasters as 'Acts of God' tend to disempower individuals and societies, limiting adaptations necessary to reduce vulnerability or hazard. Socio-economic development that extends entitlements to information, livelihood resources and inclusive governance is likely to reduce disaster risk. The challenge on small island states, as elsewhere, is to promote development that improves human welfare without generating disaster risk.

*Source:* O'Keefe and Wisner (1975); Benson (1997); Clarke and Thaman (1993); Scott (1985); Watts, (1983); Swift (1993); Paulinson (1993)

100. Similarly, liberalisation of parastatal agricultural input and produce marketing in Malawi, in the absence of a private sector capacity to fill the gap, has undermined the viability of smallholder livelihoods. This combined with HIV/AIDS to increase susceptibility to the drought and floods which triggered the 2002 food crisis.

<sup>48</sup> Pelling (1997)

### Poorly planned attempts to reduce risk can make matters worse

101. One approach to managing disaster risk is for people to move or be moved out of hazard-prone areas. Where movement is spontaneous, a planning response is needed in terms of vital public services such as transportation and water and sanitation. Families abandon their home areas usually only as a last resort, and often return as soon as possible. Displaced populations are among the most vulnerable anywhere, both because they have usually already lost most of their assets prior to moving, and because they have little choice but to congregate in urban squatter camps or poor rural areas where they face new risks. Large numbers of internally displaced persons (IDPs) are generated by combinations of insecurity and drought and remain displaced for years, as in Sudan which has over 4 million IDPs, almost half of them on the outskirts of Khartoum, living in dire poverty and open to exploitation by other groups including government-backed militias.

102. Many governments have actively resettled populations to improve their livelihoods and reduce their level of risk, as well as for other socioeconomic and political reasons. For politicians and planners, settlement schemes represent an appealing, rapid and highly visible technical fix for a range of development problems. But the history of state-led resettlement, with its predilection for coercion and poor planning, is not a happy one. Often risks have been avoided only to create new ones. Most schemes have been expensive failures, some of catastrophic proportions as in Ethiopia under the *Derg* regime.

103. Resettlement on a more localised scale is involved in the residential clusters programme in Vietnam (see Box 10). The early experiences of this programme are illustrative of another key linkage issue between disaster risk reduction activity and development: how dealing with hazards in a narrow sectoral sense may fail because it is insufficiently integrated with the development needs of the poor. It either risks failure in developmental terms because it exacerbates broader aspects of poverty and social vulnerability, or it risks failure as a direct hazard response because it is rejected by the poor.

#### Box 10: A failed response to flooding risk: residential clusters in Vietnam

Disaster risk reduction efforts in Vietnam's Mekong Delta have many positive aspects, but government efforts since the mid-1990s to relocate low-income households in specially constructed safe (high ground) areas called 'residential clusters' have been conspicuously unsuccessful. According to one agency in Vietnam, residential clusters had been 'clumsily' implemented by some provinces from a narrowly sectoral perspective of disaster management. This resulted in low uptake of resettlement loans made available to households. By the end of 2002, 142 residential clusters had been completed, with planned space for 39,000 households; however only 3,000 households had actually moved in.

A report for CARE International suggests that many sites within the Delta for re-housing low-income households were initially created with inadequate sanitation, water and electricity provision, poor consideration of employment location and community composition, and no on-site public facilities. The report also suggests there was little effective community participation in their planning, construction and management. Some of these issues are now being addressed by the provincial governments.

*Source:* MARD (2003); Adam Fforde & Associates (2003)

104. Similarly, large-scale engineering approaches aimed at minimising hazards may actually create risk, while community-based ones focussing on reducing vulnerability can be more effective. As an example of the former approach, the World Bank-supported Bangladesh Flood Action Plan has been widely criticised for, *inter alia*, increasing flood risk for people in downstream areas and between embankments, and even in 'protected' areas due to the risk of embankment failure. DFID is now supporting an alternative approach in Bangladesh aimed at addressing vulnerability of riverine communities, for example through flood shelters – an approach which promises to be more effective and is much preferred by those communities.<sup>49</sup> This it not to suggest that there is no place for physical or structural

<sup>49</sup> NAO (2003:25)



measures to reduce hazard risks – on the contrary, these two approaches most often need to work together.

105. Infrastructural developments may create a false security. People are attracted to sites where hazard mitigation is in place but may be at extreme risk if these infrastructures fail – this is most commonly the case with river and coastal flood defences. High losses to flooding are frequently a result of informal and planned settlement adjacent to ‘safe’ flood defences. This has been the case in India where despite decades of investment in river embankments losses remain high.<sup>50</sup> Likewise, where key infrastructure is not adequately disaster-proofed losses can be magnified, often as secondary impacts. According to PAHO, in Latin America and the Caribbean over the last 20 years disasters have led to the collapse or evacuation of 100 hospitals and 650 health centres.<sup>51</sup>

### *Disaster responses can themselves exacerbate risk*

106. Uncertainty about how humanitarian aid should relate to longer-term recovery and developmental goals can lead to missed opportunities for reducing risk. Failures in risk reduction have resulted in populations exposed to predictable and frequent hazards becoming more-or-less permanent recipients of humanitarian assistance. Such assistance, while vital for saving lives, is not good at raising people out of positions of repeated exposure to risk and vulnerability and under some conditions can undermine resilience. Better suited to this task are those tools we think of as being more suited to development than traditional ‘relief’: participatory analysis of problems and risks, and measures to address them such as livelihood diversification, governance and macro-economic measures, infrastructure and social services investment and political will to find a way forward.

107. In humanitarian operations an emergency mode of operation can preclude the recognition of opportunities for promoting recovery and participation where these exist. In some cases development actors are excluded from rehabilitation programmes – for example UN-HABITAT is seldom invited to participate in emergency housing assistance and rehabilitation. An exception to this occurred following the December 2003 Bam earthquake in Iran. In this case UN-HABITAT advised that because the city water infrastructure was largely intact, plans to establish temporary housing on the city fringes whilst the city was rebuilt over the coming months or years were inappropriate. An alternative plan was developed based on supporting residents in the reconstruction of their own properties, incorporating improved seismic resistance.<sup>52</sup>

108. International food aid has a vital role in humanitarian assistance programmes to save lives in the wake of disasters when there are problems of food availability. Under certain circumstances it can also be appropriate in the context of longer-term programmes to protect or help rebuild productive assets of those most vulnerable to disasters. Yet as a number of recent studies have shown, food aid has too often fallen short of these objectives or has been demonstrably counterproductive.<sup>53</sup> In acute crises it has often arrived late or in insufficient quantities, and has subsequently impeded recovery through adverse effects on prices and incentives. Unless there is acute food availability shortfall or market failure, cash or other forms of non-food assistance are most often preferable to food assistance, and yet in both emergency humanitarian and recovery and safety net programmes it is non-food assistance that is most consistently under-resourced.

109. In Ethiopia’s Somali Region a famine in 1999-2000, sparked by drought but with links to past and current regional conflicts, killed anywhere between 10,000 and 100,000 people.

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<sup>50</sup> Pelling (2001)

<sup>51</sup> PAHO (2003)

<sup>52</sup> Dan Lewis, Chief, Disaster, Post-Conflict and Safety Section, UN-HABITAT, Nairobi (personal communication)

<sup>53</sup> For example Barrett & Maxwell (forthcoming); Clay, D. (1998); Clay, E., (2000, 2003); IDS (2002)

Humanitarian agencies were late on the scene and food aid became available only after the peak of human mortality had passed and tens of thousands of households in this pastoralist area had already lost their livestock and their livelihoods. When the relief operation did start, people flocked to temporary settlements on the outskirts of towns like Gode and other major distribution centres. Poor health and sanitation conditions there appear to have caused a resurgence in child mortality. The humanitarian response was overwhelmingly food aid centred, and remained so. With little or no help for re-establishing their livelihoods many people stayed in Gode, trapped in a situation of food aid dependence – and were still there two or more years later. Some of the food aid was sold in local markets, where it undercut locally produced grain and undermined livelihoods of farmers and traders.<sup>54</sup>

### 3.3 'Disaster-proofing' development: what are the gains?

#### From 'vicious spirals' of failed development and disaster risk...

110. The two-way links between disasters and development outlined in Sections 3.1 and 3.2 can take the form of 'vicious spirals', such as the two shown in Figure 2. The anticlockwise spiral shows development failures undermining capacity to cope and increasing exposure to hazard. Without effective risk reduction measures, dangers to people and assets are

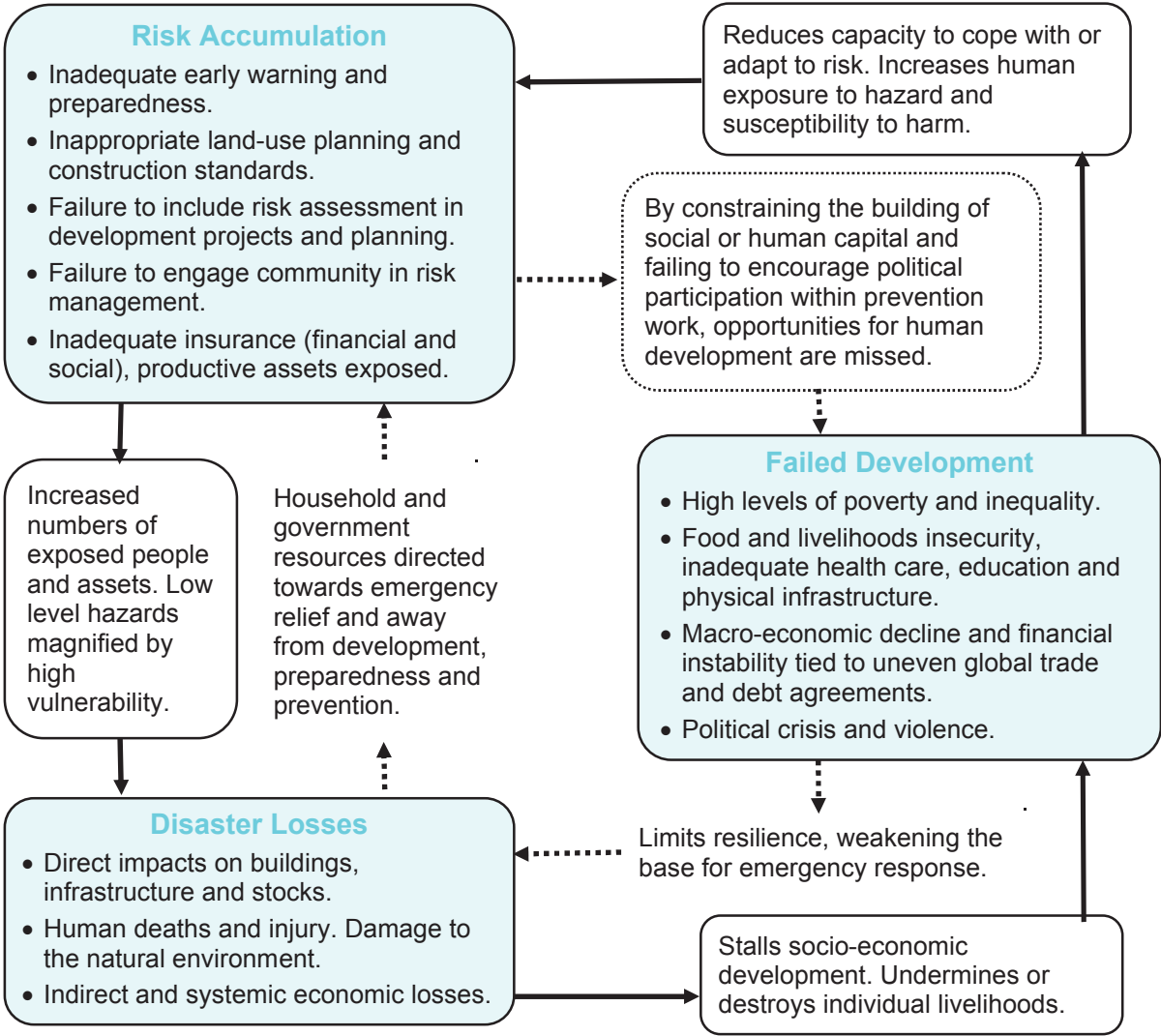


Figure 2: 'Vicious spirals' of disaster risk and development failure

<sup>54</sup> IDS (2002)



magnified, in turn increasing the likelihood and severity of disaster. Failure to mitigate avoidable disaster risk leads to direct disaster impacts such as damage to housing or infrastructure, in turn holding back development and undermining livelihoods.

111. In the clockwise spiral failed development is seen to undermine national capacity to respond strategically to disaster impacts which means development resources are redirected towards humanitarian assistance or emergency coping. This in turn can create risk and constrain options for and participation in progressive development. The same downwards spiral may be seen in operation at the household level where the failure to develop sustainable livelihoods or the undermining of existing livelihoods results in increasingly desperate measures, leading eventually to selling-off of assets, indebtedness and disintegration. The two scales are mutually reinforcing with reduced national level development undermining local livelihood opportunities, while erosion of coping capacities means a greater need for humanitarian assistance following a disaster.

... to 'virtuous spirals' of risk reduction

112. Figure 3 is a response to Figure 2.<sup>55</sup> It outlines the possibility for 'virtuous spirals' of development and disaster risk reduction backed up by timely and appropriate disaster response. In the anti-clockwise circuit development mainstreams disaster risk reduction so

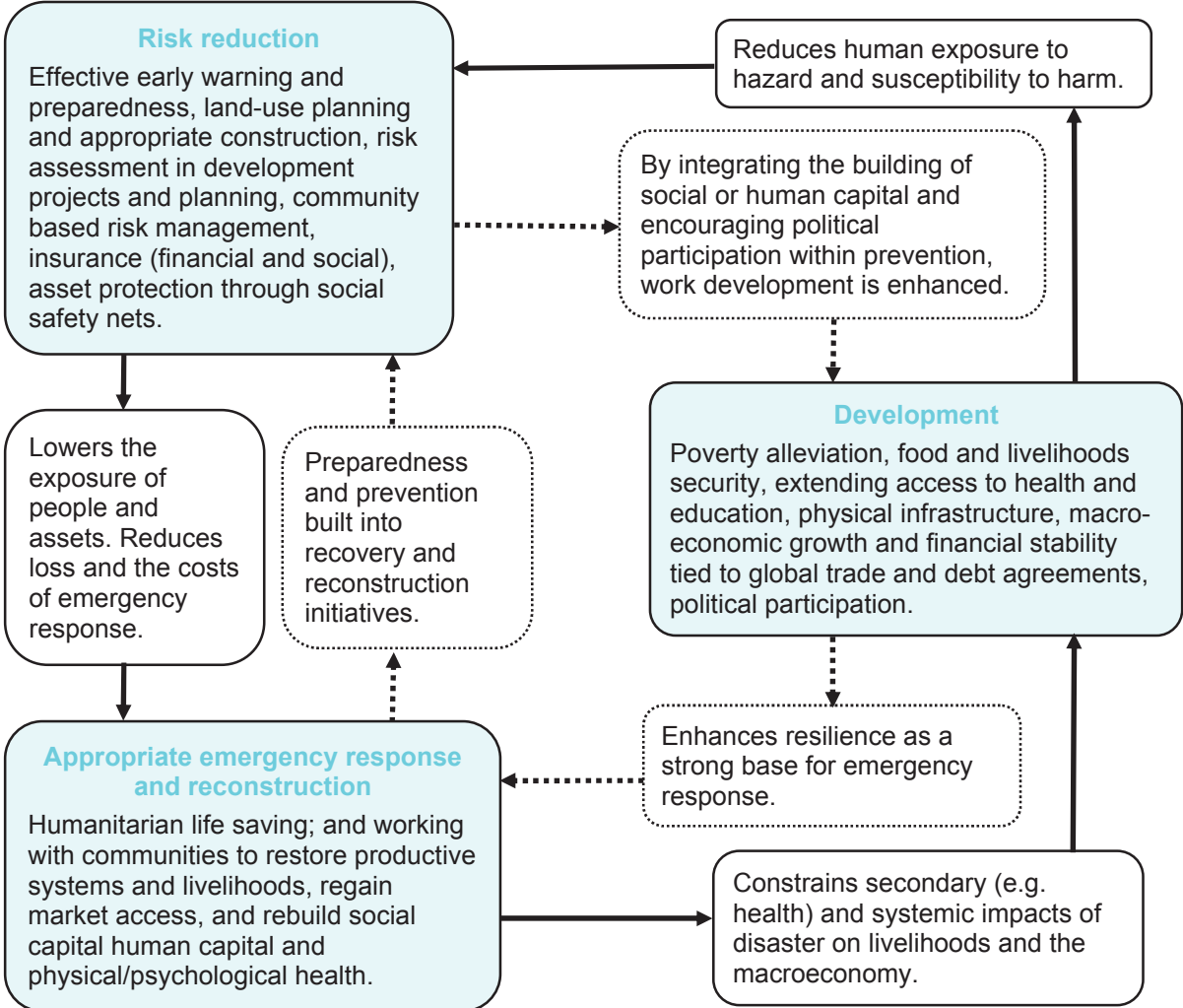


Figure 3: 'Virtuous spirals' of risk reduction

<sup>55</sup> The format of Figure 2 and Figure 3 is based on the graphical representation of a two-way causal cycle between HIV prevention, development and AIDS care in Holden (2003:36).

that exposure and susceptibility to harm are minimised, and this is matched by the integration of development into disaster response so that losses are contained. In the clockwise loop, development provides a basis for strong emergency response, and a unique opportunity to reinforce disaster risk reduction in the process of reconstruction, in turn providing a more secure environment to enable and protect development gains.

### *Disaster risk reduction can help achieve the Millennium Development Goals*

113. Given the very large developing country populations affected each year by disasters, transforming these vicious spirals into virtuous ones has direct relevance for achieving the MDGs. The MDGs have re-focused the agenda of the development community. Priority MDG concerns are central to the disaster risk reduction agenda and *vice versa* – hence the need for this agenda to be an integral element in strategies to meet the MDGs. UNDP comes to a similar conclusion describing "climate shocks, natural disaster and rampant diseases" as key structural challenges to meeting the MDGs.<sup>56</sup>

114. Some examples of pathways through which disaster risk reduction can contribute towards the MDGs are offered in Table 3 below. Operationalising this contribution can draw on a wealth of existing good practice<sup>57</sup> and prospective entry points. A selection of the latter is presented in Section 5. The key challenge for effective disaster risk reduction is the successful integration of these mechanisms into development policy and programming.

### *... and can be cost-effective*

115. The literature on disasters cites a wide range of cases (Box 11 summarises a sample

#### **Box 11: Cost-effectiveness of disaster risk reduction – some examples**

- The World Bank and the US Geological Survey calculated that economic losses worldwide from disasters during the 1990s could have been reduced by US\$ 280 billion worldwide if US\$ 40 billion were invested in mitigation and preparedness.
- In China, investment of US\$ 3.15 billion in flood control measures over 40 years is believed to have averted potential losses of US\$ 12 billion.
- In Vietnam, 12,000 hectares of mangroves planted by the Red Cross protect 110 km of sea-dykes. Planting and protection cost US\$ 1.1 million but has reduced the cost of dyke maintenance by US\$ 7.3 million per year (and the mangroves have protected 7,750 families living behind the dyke).
- According to Oxfam, the value of cattle saved on a flood shelter of 4 acres in Bangladesh during the 1998 floods was as much as £150,000, against a construction cost of only £8,650.
- A study on Jamaica and Dominica calculated that the potential avoided losses compared with the costs of mitigation when building infrastructure like ports and schools would have been between two and four times. For example, a year after constructing a deepwater port in Dominica, Hurricane David necessitated reconstruction costs equivalent to 41% of the original investment; while building the port to a standard that could resist such a hurricane would have cost only about 12%.
- In Darbhanga district in North Bihar, India, a cost-benefit analysis of disaster mitigation and preparedness (DMP) interventions suggests that for every Indian rupee spent, 3.76 rupees of benefits were realised. The Net Present Value (NPV) of the project was calculated at £46,000.
- In the same district, a cost-benefit analysis of installing raised handpumps less susceptible to flooding compared two scenarios – a 'without' scenario where government handpumps were blocked each year by the silt and debris carried by the flood water and the pumped groundwater was contaminated, and a 'with' scenario where raised handpumps did not become blocked. The benefit/cost ratio of raised handpumps was calculated at 3.20 with a NPV of almost £3000.

Source: Twigg (2002); World Bank (2004); Tearfund (2004c)

<sup>56</sup> UNDP (2003:4)

<sup>57</sup> The Humanitarian Practice Network at ODI has recently published a *Good Practice Review* on disaster risk reduction (Twigg, 2004)

of these) where the economic benefits of risk reduction measures that were or might have been taken seemed significantly to outweigh their costs. Many of these examples, based either on 'with-without' comparisons (comparing losses in the same disaster between areas that employed risk reduction strategies and those that did not), or 'before-after' comparisons (comparing disaster losses in an area which had risk reduction strategies to those in the same area in an earlier comparable disaster when it did not), raise methodological questions relating to the estimation of costs and benefits. These are reflected upon further in Section 4.

116. Examples are also available of how investment in risk reduction strategies has boosted national resilience to disasters. In Bangladesh, the sensitivity of both agricultural and non-agricultural GDP to natural hazards has been declining over time. One important reason for this has been the investment in structural flood control, particularly towards urban and industrial protection, since the 1980s.<sup>58</sup>

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<sup>58</sup> Benson and Clay (2003:12)

**Table 3: What disaster risk reduction can contribute towards meeting the MDGs**

MDG	Examples of what risk reduction can contribute
<b>1. Eradicate extreme poverty and hunger</b>	<ul style="list-style-type: none"> <li>• Disaster risk reduction and MDG1 are interdependent. Reducing livelihood vulnerability to natural hazards is key both to eradicating income poverty and improving equity, and to improving food security and reducing hunger. Reducing disaster impacts on the macroeconomy will promote growth, fiscal stability and state service provision, with particular benefits for the poor.</li> <li>• Disaster risk reduction and MDG1 share common strategies and tools: this overlap means that giving development more security from natural hazard can be very cost-effective.</li> </ul>
<b>2. Achieve universal primary education</b>	<ul style="list-style-type: none"> <li>• In hazard-prone areas, the case for building schools and encouraging attendance becomes much stronger if buildings are safe and students and teachers are trained in emergency preparedness. Promoting safer structures may encourage better maintenance even in non-disaster times.</li> <li>• Reduced vulnerability will allow households to invest in priorities other than mere survival. Education is often a high priority. Girls (as 60% of non-attendees) may benefit disproportionately.</li> </ul>
<b>3. Promote gender equality and empower women</b>	<ul style="list-style-type: none"> <li>• Better risk reduction will help protect women from disproportionate disaster impacts.</li> <li>• Collective action to reduce risk by households and communities provides entry points for women (and other marginalised social groups) to organise for other purposes too, providing a catalyst for economic and social empowerment.</li> </ul>
<b>4. Reduce child mortality</b>	<ul style="list-style-type: none"> <li>• Disaster risk reduction will help protect children from direct deaths and injuries during hazard events (as exemplified in Box 5, p.24), and will lower mortality from diseases related to malnutrition and poor water and sanitation following disasters.</li> <li>• Health infrastructure and personnel in hazard-prone areas will be better protected. This may also promote better maintenance of infrastructure.</li> </ul>
<b>5. Improve maternal health</b>	<ul style="list-style-type: none"> <li>• Disaster-related illness and injury will be reduced.</li> <li>• Improved household livelihood and food security will lower women's workloads and improve family nutrition.</li> <li>• Health infrastructure and personnel in hazard-prone areas will be better protected. This may also promote better maintenance of infrastructure.</li> </ul>
<b>6. Combat HIV/AIDS, malaria and other diseases</b>	<ul style="list-style-type: none"> <li>• Public health risks, e.g. from flood waters, will be reduced, and nutrition and health status improved, boosting resistance to epidemic disease.</li> <li>• Fewer disasters will free up social sector budgets for human development.</li> <li>• Livelihood security will reduce the need to resort to work in the sex industry.</li> <li>• Community organisations and networks working in disaster risk reduction are a resource for family and community health promotion, and visa versa.</li> </ul>
<b>7. Ensure environmental sustainability.</b>	<ul style="list-style-type: none"> <li>• Reduced disaster-related migration into urban slums and reduced damage to urban infrastructure will improve urban environments.</li> <li>• An emphasis on governance for risk reduction and more secure livelihoods will help curb rural and urban environmental degradation.</li> <li>• Risk reduction partnerships that include community level actors and concerns will offer more sustainable infrastructure planning, and enable expansion of private sector contributions to reducing disasters.</li> <li>• Housing is a key livelihood asset for the urban poor. Disaster risk reduction programmes that prioritise housing will also help preserve livelihoods.</li> </ul>
<b>8. Develop a global partnership for development.</b>	<ul style="list-style-type: none"> <li>• Creating an international governance regime to reduce risk from climate change and other disasters will help overcome disparities in national negotiating weight.</li> <li>• Efforts to build equal global partnerships for risk reduction will have particular relevance for small island developing states and HIPC's.</li> <li>• Disaster risk reduction initiatives could promote better public-private partnerships.</li> </ul>
<b>All MDGs</b>	<ul style="list-style-type: none"> <li>• Reducing disaster impacts will free up resources, including ODA, to meet MDGs.</li> </ul>

## 4. Why does development tend to overlook disaster risk?

### Summary

If disasters are a major threat to and are partly rooted in development, why the apparent lack of commitment to reducing disaster risk? This section offers an explanation in terms of a range of structural constraints working against disaster risk reduction, related to incentives, institutional organisation and funding frameworks:

- For politicians, progress on risk reduction is much less visible than emergency response.
- Governments find donors less willing to fund risk reduction than emergency assistance. The PRS process has found itself poorly equipped in guiding countries in how to tackle risk
- Donors respond to media pressure and the media take little interest in risk reduction.
- Disaster risk reduction falls into the gap between donors' humanitarian and development wings.
- NGOs can integrate disaster concerns more readily, but tend to follow donor priorities.

Other factors include an assumption that poverty-focused development will automatically reduce disaster risk; and inadequate exposure to and information on disaster issues.

### 4.1 Introduction

117. The previous sections have highlighted the increasing frequency of disasters, their rising costs and numbers of people affected, their capacity to hold back development and their origins in development failures. Despite this, within the policy frameworks and practice of bilateral donor agencies and across the wider spectrum of development governance institutions a systematic approach to assessing and addressing disaster risk is lacking. In seeking to explain this, the Study finds the most important factors relate to:

- incentive, institutional and funding structures;
- assumptions about the risk-reducing capacity of pro-poor development;
- inadequate exposure to and information on disaster issues.

### 4.2 Incentive, institutional and funding structures

#### *Political incentives and governance in disaster prone countries*

118. There is a perverse architecture of incentives stacked against disaster risk reduction. It is generally a long-term, relatively low-visibility process, with no guarantee of tangible rewards in the short term and little media interest. When a disaster is prevented or its impacts substantially mitigated through appropriate risk reduction measures, it is often not obvious how much worse matters would have been had those measures not been taken. A lack of commitment to 'counterfactual' impact analysis and scenario planning means that there is little institutional awareness of possible alternative 'futures'. In contrast, when a disaster strikes the impacts are highly visible, even when onset is slow. Disasters usually make headline news, albeit for a far briefer period than their impacts are felt, and the news normally includes prominent coverage of any immediate, short-term humanitarian responses.

119. For politicians in hazard-prone countries, being associated with disaster response, for example the distribution of food aid or the reconstruction of schools and hospitals, yields quick political returns. Any such kudos that might result from success in the introduction of longer-term risk reduction measures is likely to be limited in comparison, and outside most politicians' time horizons. In some cases, Central America being prominently represented amongst these, leading political figures have enthusiastically pledged support for risk reduction measures, but have largely failed to follow up words with action.



120. Where political governance is weakened through corruption, lack of participation or internal or external challenges to state control, investing in reduction of disaster risk is likely to be even less of a priority. The new governments in Eritrea and Ethiopia following the fall of the Ethiopian *Derg* in 1991 began, in their respective ways, to make progress in tackling a high level of food insecurity in their war-ravaged societies. Both countries moved to strengthen early warning systems and invest in post-war rehabilitation measures. Ethiopia set up a Disaster Prevention and Preparedness Commission to coordinate efforts to reduce disaster impacts, especially that of drought. However when the two countries went to war in 1998 over a border dispute, longer-term measures to improve food security were sacrificed on both sides and replaced by war acts which heightened food insecurity further. Even emergency programmes to respond to the 1999/2000 drought were affected.

121. Yet where the political will exists, results can be impressive. India's Famine Codes, dating back to 1880, provided the basis for a nationwide system of early warning and intervention through relief and employment generation which has kept famine in check in the post-Independence era. When Hurricane Michelle swept across the most populated parts of Cuba in 2001, deaths were limited to just five. This success has been attributed to thorough preparedness training and planning, an effective cadre of local personnel, effective communication of early warning and instructions which people trusted and acted upon and political commitment to risk reduction with attention to the most vulnerable people.<sup>59</sup>

122. The prospect of political dissent can provide an incentive for governments to act to reduce risk: Wisner *et al.* draw attention to several recent instances – Turkey (1999, 2003), El Salvador (2001), Gujarat (2001), Italy (2002) – in which deaths of children when school buildings collapsed in earthquakes have sparked popular outrage both locally and internationally, leading to calls for stronger and better enforced legislation on building codes.<sup>60</sup> Yet all too often the relations of governance that might translate such demands into effective action prove, through corruption, indifference or inadequate staffing, unequal to the task, especially where communities at most risk are those with least political voice. Infrequency of risk is often a problem here: if politicians calculate that a serious hazard event is unlikely to occur within their political lifetime, they are less likely to act to reduce risk from such a hazard than for less serious but more frequent hazards. Thus little has been done to regulate building in the Kathmandu valley, despite the knowledge that an earthquake on the scale of that of 1934, projected to recur at intervals of around 75 years, could see destruction, loss of life and suffering on a massive scale.

### **Government-donor relations and moral hazard**

123. Governments in hazard-prone countries are rarely unaware of these hazards, and most establish policies and take at least some steps to mitigate or prepare for them. Fiscally and technically constrained developing country governments often invite donor assistance to strengthen such measures in the form of budgetary support and technical assistance, yet can find that longer-term donor commitment to risk reduction is not forthcoming. In contrast, when they declare a disaster and issue an appeal for emergency assistance, donor funds flow much more freely.

124. Such a disincentive effect associated with foreign assistance has been referred to in 'moral hazard' or 'Samaritan's dilemma' terms. The IMF, for example, cautions against "concessional external finance [which] may reduce incentives for countries to take preventative measures to reduce their vulnerability to shocks", and cites the example of compensatory financing mechanisms provided as a 'safety net' against falling prices of primary export commodities.<sup>61</sup> Yet given the limited capacity of many governments to act to reduce risk, this is a dilemma which donors could do much to address by being less reticent

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<sup>59</sup> Wisner *et al.* (2004)

<sup>60</sup> *Ibid.* p. 317

<sup>61</sup> IMF (2003:20)



in providing support in this area, including for post-disaster rehabilitation and reconstruction measures which help to prevent future disasters.

125. Governments of the poorest countries have often found that their relations with international finance institutions have discouraged rather than facilitated action to reduce risk from disasters. Mozambique's World Bank/IMF-led poverty reduction strategy paper calls for swingeing cuts in social spending which mean that although it pays lip service to reducing vulnerability, the Government has been in effect obliged to choose between health, education and disaster risk reduction and has opted for the more immediate benefits derivable from health and urban water/sanitation. Spending on education has been reduced substantially, and on flood management much more so.<sup>62</sup>

### *Donors and multilateral agencies*

#### *Donors and the media*

126. Donor governments are also influenced by media pressure, and indeed the national and international media are vital in generating public pressure to mobilise international humanitarian assistance in the wake of a disaster. Yet by the same token lack of media interest in prevention and preparedness can make it easier for donors to remain inactive in the face of disaster risk. This became apparent, for example, in the food crises in Ethiopia in 2000 and Malawi in 2002: local donor offices were aware of worsening conditions several months before the international media 'discovered' the famine in each case, but were preoccupied by governance failures (respectively the pursuit of war with Eritrea and the disappearance of the strategic grain reserve) and failed to respond in a timely fashion.

127. Similarly, the loss of media interest once the acute phase of a disaster is over tends to be accompanied by a waning in external support for recovery programmes. The international media needs to be encouraged to take a greater interest in risk reduction, both in the wake of actual disasters but also for those that threaten in the world's disaster 'hot spots'. Donors might then be subject to greater public pressure to give the issue more serious attention, and to highlight the risk reduction attributes of both humanitarian and development work that they already support but that are largely invisible as they are unreported.

#### *Institutional separation of humanitarian and development wings*

128. In both bilateral and multilateral aid agencies there remains a significant gulf between departments responsible for emergency operations and those concerned with development policy and programming. Institutional and cultural barriers between humanitarian and development professionals arise because the two groups tend to be organisationally and even physically separated so that day-to-day interaction is sub-optimal, and because they often have different disciplinary and experiential backgrounds. This separation is accentuated with the more 'hands off' approach to relationships between donors and implementers that comes with the move to budgetary support. A common if extreme characterisation of their mutual mistrust is that humanitarian specialists regard development practitioners as immersed in technical and economic concerns of sustainability, growth and cost recovery but ignorant of or uncaring about deepening poverty, inequality and vulnerability, while development practitioners view humanitarian specialists as technically under-qualified, unaccountable, ignorant of social and historical context, publicity-seeking and short-term in outlook.

129. Yet such a characterisation is becoming increasingly inaccurate. With the help of the MDGs, poverty, inequality, exclusion and vulnerability have become mainstream development concerns, as evidenced by Poverty Reduction Strategy (PRS) processes, a focus on social protection and participation, and support for livelihoods, food security and better governance. Humanitarian agencies have also moved to close the gulf, attempting to broaden the remit of humanitarian programming to include rehabilitative and developmental

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<sup>62</sup> Christie & Hanlon (2001)

interventions as well as peace-building in conflict contexts, though not without an ongoing debate on the implications of this for upholding humanitarian principles. Parties involved in emergency response may in practice play key roles in wider mitigation activities.

130. Yet as the Study team found in Southern Africa and Ethiopia, there remains much uncertainty at the interface between humanitarian and development assistance: at what point following a disaster should development issues be considered and humanitarian operations be handed over to development actors, under what circumstances and using what mechanisms? These questions become even more difficult when impacts of a slow onset disaster such as drought are indistinguishable from underlying chronic vulnerability and destitution caused by secular decline in assets, resource access or health status. They highlight the very interdisciplinary nature of disaster risk reduction, and the importance – but also the challenge – of involving many different stakeholders.

#### *The funding of support for disaster risk reduction*

131. Alongside the organisational separation of emergency and development activities of large bilateral and multilateral agencies is a separation of funding arrangements. Budget lines for humanitarian and conflict-related assistance are normally distinct from those for regular development activities, and are able quickly to draw on contingency reserves in response to emergencies that may arise during the funding cycle. In most cases, however, emergency funds must be disbursed within a short period (up to a year) and so cannot be used for longer-term activities which aim to build on risk reduction opportunities that emerge in the aftermath of a disaster. Ideally such opportunities would be picked up by and incorporated into existing or new development programmes, either by the same or a different agency, but this assumes a degree of flexibility and responsiveness that is not normally found in development planning and budgeting. Falling real volumes of development aid during the 1990s have not encouraged investment in new risk reduction initiatives.

132. Paradoxically, one factor militating against donor responsiveness to funding opportunities for risk reduction may be their very cost-effectiveness. Desk officers in donor and multilateral agencies tend to be under pressure to meet spending targets, and this makes it difficult for them to prioritise low-budget but relatively long-term and time-consuming mainstreaming activities such as disaster risk reduction. This important effect is replicated down the funding chain, as organisations funded by donors are obliged to expend funds and demonstrate results within a limited timeframe. It is a frequent refrain of those concerned about failure to move beyond emergency modes of response to disasters that donors do not adopt a sufficiently long-term view of resourcing requirements for risk reduction.

#### *Pressure of work and reluctance to ‘mainstream’ yet another concern*

133. Over the last two decades development professionals have been called upon to ‘mainstream’ a succession of new issues into their everyday work – from poverty and equity, environmental sustainability, gender, stakeholder participation and institutional capacity-building, to HIV/AIDS – and with pressure for restraint on staffing levels to administer programmes individual workloads have tended to rise. It is not surprising that exhortations from disasters specialists to ‘mainstream’ yet another issue are not generally welcomed, especially when delivered with more missionary zeal than convincing evidence, and even more so if couched in language unfamiliar to core development disciplines.

134. This has added to the effect of the humanitarian-development divide in leading to a situation in which any issue with a ‘disasters’ label attached to it is referred to the humanitarian department, even if it concerns longer-term issues including tackling vulnerability and ensuring that development is truly sustainable.

#### *The primacy of the MDGs*

135. The MDGs have rightly become a central focus for bilateral and multilateral development agencies and a benchmark against which they will be evaluated. Prospects that several of the Goals will not be achieved by their 2015 target date without giving a new

impetus – and an additional \$50 billion – to international development aid have further sharpened this focus. The need to focus on reducing risks from disasters is included in the UN Millennium Declaration; however it has no specific goal attached to it<sup>63</sup>. As the Study team’s consultations with DFID advisers at headquarters and country levels made clear, this means that the primacy accorded to the MDGs does not necessarily translate into support for reducing vulnerability to disasters, and may even crowd out commitment to such support.

136. The devastation caused by major disasters is at least recognised if often underestimated by the development community. Many of DFID’s Country Assistance Plans (CAPs), for example, include at least some assessment of prominent natural hazards affecting the country, and some make mention of likely disaster impacts on prospects of meeting MDGs. Yet while present guidelines on CAP preparation specify a detailed assessment of how the plan is expected to contribute to respective MDGs, and identification of what risks might affect achievement of the overall outcomes of the Poverty Strategy, there is no mention of disasters at all. Similar considerations apply to guidelines on preparation of project memoranda. Thus there is no mechanism for ensuring that the significance of disaster risks and options for addressing those risks are assessed in any systematic way. Consequently CAPs vary widely in their incorporation of disaster risk, and not necessarily in ways that reflect actual vulnerability to natural hazards.

#### *Pressure to focus on complex emergencies and security concerns*

137. The massive humanitarian suffering that resulted from a series of complex political emergencies during the 1990s dominated the humanitarian agenda and used up large amounts of aid funds, drawing public and donor attention away from the problems of vulnerability to natural hazards. While the spate of large ‘natural’ disasters between 1998 and 2001 temporarily regained prominence, the focus and resourcing has shifted once again in the post-9/11 era, towards the War on Terror.<sup>64</sup> This has tended to reverse the evolution of disaster risk reduction thinking from its roots as a militarised (civil defence led), hazard-focussed paradigm towards a much more useful focus on vulnerability, and so represents a major potential obstacle to its effective integration as a development concern<sup>65</sup>.

#### *Food aid and domestic agricultural support*

138. Some of the drawbacks associated with a heavy reliance on food aid in humanitarian responses to disasters were detailed in Section 3.2 above. An examination of patterns of global food aid provision reveals that they are strongly reflective of supply-side influences, with shipments tending to decline at times of high world prices when they could most benefit recipient countries. A (some would say *the*) main driving force behind food aid policy has been its use by donor governments as a tool of political economy, both domestically in responding to pressure from agricultural lobbies but also in pursuit of foreign policy objectives ranging from support for the post-communist state in Russia, opposition politics in North Korea and pro-West government in Egypt, to the "War on Terror". These implicit functions of food aid undoubtedly partly explain its pre-eminence in international disaster management in preference to more risk-reduction oriented approaches. Its consequent volatility, unpredictability and unresponsiveness to changing contexts of food insecurity have greatly limited its value as a dependable resource in emergencies and in (re)building resilience amongst communities exposed to hazards.

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<sup>63</sup> In para. 23, Section IV (Protecting our common environment), the Declaration pledges “To intensify cooperation to reduce the number and effects of natural and man-made disasters.”

<sup>64</sup> IFRC (2002a:13)

<sup>65</sup> Some, such as Duffield (2001), would go further to argue that development has itself become merged with security in a global ‘project’ of liberal governance, a project based on the attribution of instability, conflict and terrorism to underdevelopment rather than on a recognition of their real roots in complex local-global networks which sustain illiberal regimes. This would suggest a further reason why ‘natural’ disasters might come a poor second to conflict as a development concern.

## NGOs

139. International NGOs and their local partners have become increasingly important as channels for bilateral and multilateral assistance for both humanitarian and development programming. Their potential contribution to disaster reduction was recognised in the latter stages of the IDNDR when strenuous efforts were made to involve them in international risk reduction debates. To the extent that they are smaller, more flexible and closer to the 'coalface' of field-level programming, NGOs tend to suffer less from the humanitarian-development gulf that affects donor and multilateral agencies, and have been at the forefront of efforts to link emergency and development activities.

140. Yet for NGOs performance tends to be judged in terms of visibility on the ground and ability to attract and deploy donor funding. Their dependence on and accountability to donor funding mechanisms and evaluation structures means that their priorities and perceptions often reflect those of donors, as they will design projects with a view to donor acceptability. Funding arrangements are normally project-based and time-bound. Those projects which attract the most funding most easily and are most visible tend to be emergency ones, which are normally of a year's duration or less and involve rapid disbursement of funds. This makes it difficult for NGOs to think in terms of longer-term, often lower cost risk reduction activities, particularly those that are 'softer' (e.g. capacity-building) rather than 'harder' (e.g. flood protection structures), and limits their influence on policy.

141. In responding to acute crises around the world, NGOs may rely heavily on young, mobile expatriate staff who are not always appropriately experienced and may have little local knowledge and little time to acquire it. Their departure soon after the crisis and the funding subsides leaves little in the way of local capacity to build risk reduction into recovery. High staff turnover militates against the building up of institutional memory, especially at national and local levels. The tying of staff and funds to projects also results in a lack of resources for strategic, longer-term planning. Moreover many NGOs give limited practical guidance to field officers in planning and implementing projects, with the result that hazard assessment and other risk reduction aspects tend to be overlooked. This tendency is exacerbated by the fact that NGO staff at policy and field levels are just as overworked as their counterparts in governmental organisations.<sup>66</sup>

### 4.3 Lack of exposure to and information on disaster issues

142. An important factor contributing to the marginal position of disaster risk reduction in development policy appears to be a general lack of exposure to disaster issues within the donor community. There was the IDNDR (1990-1999), but this achieved only a modest profile and tended to focus on technology and hazard management rather than vulnerability. More recent work<sup>67</sup>, which deserves serious attention across the development disciplines, has enhanced our understanding and knowledge of how to design policies and programmes which tackle the governance and socio-economic aspects of disaster risk.

143. A recent survey of donors by Tearfund, a UK Christian charity, identified lack of understanding of what risk reduction entails as a key constraint. This was attributed to communication failures between sectors and departments, the very broad interdisciplinary scope of disaster risk reduction, and the confusing breadth of terminology used.<sup>68</sup>

144. One view encountered by the Study team was that before adopting a policy of disaster risk reduction DFID needs to examine whether it has a 'comparative advantage' in this area, and if not it should leave the field to other agencies such as UNDP-BCPR or IFRC which are funded through ODA and which as implementing agencies have more expertise. A problem

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<sup>66</sup> Twigg *et al.* (2000:131)

<sup>67</sup> This includes IFRC (2002a); Tearfund (2003); Wisner *et al.* (2004); UNDP (2004); Twigg (2004); Benson and Clay (2004); UN-ISDR (2004); Benson & Twigg, forthcoming.

<sup>68</sup> Tearfund (*op. cit.*)



with this proposal is that any such division of labour between agencies, whether donors or implementers, runs counter to the core rationale of integration – that effective risk reduction, while requiring explicit attention and sometimes distinct interventions, is primarily about the manner in which development processes are designed and implemented. Moreover, it is important that donors champion these issues and lobby for them, for example with Banks and executive boards, as well as extend the necessary funding.

145. The problem also stems in part from information inadequacies due to shortcomings in data collection coverage and methodologies (Box 12) and the knowledge derived from them.<sup>69</sup> Paradoxically, the growth in scientific and media attention to major natural hazards may also have contributed to misunderstanding and misdiagnosis of disaster risk. This is precisely because the lack of data on small and medium-sized disasters has distorted the focus of attention towards the most extreme events. Two critical kinds of misunderstanding are that disasters are rare in any given place, and that when they do occur they are of such a magnitude that little could have been done to mitigate their impacts. Perceptions of disaster rarity and fatalism can too easily translate into policy inaction, and a drift away from development as disaster risk reduction into a reliance on humanitarian response.

#### Box 12: Shortcomings in disaster data

There is a great lack of data globally on disaster occurrence, the preconditions that lead up to individual disasters and the losses that are spread through social systems following an initial trigger.

Reinsurance companies collect detailed data on disasters for their own purposes, but these are deemed to be too commercially sensitive to be made public. They are also skewed towards their particular purpose of assessing insurance risk, and so focus less on developing countries where insured values are low.

Global assessments have been forced to use national level statistics, and produce a distorted picture of disaster impacts in several ways:

- They support the widespread impression that hazards and disasters are rare in any given place. The multitude of small and medium scale disasters are invisible to this scale of analysis, as is the diversity of smaller events associated with large disasters.
- Reporting systems for disasters are not adequately developed in many countries, or do not have sufficient information about past disasters to be able to assess risks and learn lessons.
- There is no standardised methodology for collecting data on disasters or definitions for what constitutes a 'disaster' or a 'disaster-affected' person. Data on numbers affected is especially open to political manipulation or uncertainties due to extrapolation from historical data.
- Often there is no follow-up on disaster impacts that emerge only some time after the event.

These factors limit the reliability of the one publicly accessible global database on disasters – CRED's widely-used EM-DAT database. With more donor support much could be done to remedy these deficiencies.

146. A key step in overcoming this policy drift is to set up rigorous disaster risk and impact monitoring structures. Early warning systems are central to this effort, but also have shortcomings which are discussed in Section 5. One of these is that they provide much in the way of data, but far less knowledge of a kind that would help their clients to understand the nature of the hazards they are dealing with and sources of vulnerability to them. They could

<sup>69</sup> Three ongoing initiatives co-ordinated by the ISDR are developing methods for global assessments of vulnerability and risk. Each found a significant impediment to be the lack of reliable sub-national data on disaster losses and indicators of human vulnerability. The three projects are: a) the Disaster Risk Index developed by UNDP and UNEP/GRID ([www.undp.org/bcpr/rdr.htm](http://www.undp.org/bcpr/rdr.htm)) (b) the Global Disaster Risk Hotspots project of the ProVention Consortium led by the World Bank and Columbia University ([www.proventionconsortium.org/projects/identification.htm](http://www.proventionconsortium.org/projects/identification.htm)) (c) the Indicators for Disaster Risk Management in the Americas project of the Instituto de Estudios Ambientales, Universidad Nacional de Colombia and the IDB ([www.idea.unal.edu.co](http://www.idea.unal.edu.co))



also document much more completely the short and longer-term impacts of disasters on 'affected' people, and relate these to country efforts to progress towards MDGs.

147. Many disasters specialists and several development staff consulted by the Study team suggested that a further important constraint is the lack of appropriate evidence on the costs and benefits of disaster risk reduction. In common with other ex-ante or ex-post economic appraisal exercises, the context-specific studies cited in Box 11 (page 33) all face the challenge of counterfactual analysis: how to demonstrate conclusively what would have happened if different action had been taken. Many are anecdotal and most lack detail on how costs and benefits were measured. Estimating the economic costs of disasters avoided or reduced by mitigation measures can be difficult, especially with respect to low-frequency hazards. There is also the problem of generalising from a collection of cases: returns to investment in risk reduction cannot be demonstrated independently of the specific circumstances of the investment contemplated.

148. Yet work in progress on these issues (Box 13) suggests that the constraints to better analysis of whether disaster risk reduction pays are not methodological – standard appraisal tools already available can be readily adapted for this task. What is needed is a stronger commitment to the systematic inclusion of disaster risk analysis as a basis for the design and monitoring and evaluation of development projects and programmes, and to necessary improvements in requisite data coverage and quality.

#### Box 13: Does disaster risk reduction pay?

A range of case studies and reports testifies to the apparent cost-effectiveness of disaster risk reduction activities (see Box 11), yet the basis for such assertions is most often unclear or reflects only a cursory level of analysis. This is unsurprising, since despite the high and rising cost of humanitarian responses to disasters, donor appraisal and monitoring and evaluation procedures for development projects and programmes rarely give systematic attention to the risks of impacts of and vulnerability to natural hazards, even in high-risk areas.

Cost-benefit analysis of disaster risk reduction is complicated by a number of factors: the low and uncertain probabilities of occurrence of some hazards within the lifetime of an investment, different concepts and forms of vulnerability, differences in the way people value losses and discount costs and benefits over time, and difficulties of attaching monetary values to certain types of loss including deaths, loss of cultural heritage or political costs of disaster.

Yet preliminary findings of a study commissioned by the ProVention Consortium suggest there is nothing inherently special about these challenges which puts them beyond the reach of the many standard tools and approaches already available for development project cycle management.

A systematic analysis of whether disaster risk reduction 'pays' awaits a second phase of the ProVention study, but there is already a strong case for a more explicit and detailed inclusion in project and programme design and appraisal guidelines of the analysis of risks from natural hazards and of options for reducing vulnerability, and a requirement to undertake such analysis as part of normal appraisal, especially in high risk areas and including for post-disaster rehabilitation projects.

Prerequisites for success in this area include complementary progress in improving data coverage and quality for hazards and their impacts, the political will to invest in risk reduction, and a higher level of motivation to prioritise disaster risk reduction amongst and within development institutions.

*Source:* Benson & Twigg (forthcoming)

#### 4.4 Assumptions about the risk-reducing capacity of development

149. The failure of development – and development assistance – to address the widespread persistence of poverty and vulnerability to disasters was noted in Section 3.2, as was its capacity to generate as well as reduce disaster risk. There is now broad recognition, embodied in the Millennium Declaration, that growth-oriented policies alone are not adequate and that a concerted focus on key dimensions of poverty is required. 'Vulnerability' has become part of the lexicon of poverty-focussed development, yet it is sometimes assumed that because poverty and vulnerability tend to go hand-in-hand, development that aims to reduce poverty will automatically address vulnerability.

150. While it must be acknowledged that effective poverty reduction measures will ultimately reduce vulnerability to disasters, the danger in such an assumption is that the role of risk reduction in actually achieving genuine pro-poor development will be overlooked. That much development is still not leading to true, sustainable poverty reduction can partly be explained by its failure to take proper account of disaster risk. This requires systematic assessment of exposure and susceptibility to hazards for different groups of people, and explicit attention to options for reducing this vulnerability, to be part of the process of designing development interventions.

151. Where disasters are frequent and affect large sections of the population, risk reduction begins to force itself onto the development agenda, as illustrated in the relative success of Bangladesh in implementing flood risk reduction measures. There are early signs of a parallel process in southern Africa and the Horn of Africa, where recent food crises have signalled the emergence or persistence of vulnerability on a scale that has seriously set back prospects for achievement of several of the MDGs, reflecting the combined impacts of multiple hazards including drought, conflict and HIV/AIDS. (Box 14)

#### **Box 14: Food security in Africa: the beginnings of integration?**

In large parts of Africa, food security is one risk reduction concern that has recently forced itself onto the development agenda. This has been driven by the role of natural hazards in threatening progress towards several of the MDGs, as evidenced by periodic food crises such as those in Southern Africa (2002) and the Horn of Africa (2000 and 2003). Drought and to a lesser degree floods, along with HIV/AIDS, governance failures, resource degradation, conflict and precipitous adjustment processes, have interacted in a multiplicative fashion to ratchet down people's capacity to cope with hazards and recover in interim periods. Loss of access to food is the most obvious manifestation.

This deteriorating situation has prompted new collaboration between humanitarian and development agencies to find ways to move away from a short-term emergency mode of intervention to a longer-term development-oriented one which involves closer partnerships with governments. In Ethiopia, for example, a New Coalition for Food Security has emerged which is examining the distinction between 'predictable' and 'unpredictable' vulnerability. The first reflects chronic poverty and is to be tackled using multi-annual safety net programmes with funding guaranteed by donors in advance, while the second will remain a concern of emergency programming. DFID, as a member of the Coalition, is proposing that safety nets should have developmental as well as purely welfare aims, including risk reduction through diversification of income sources and protection/building of assets.

Several challenges remain in both of these regions, for example:

- how in practice to distinguish between these two target groups, and prevent the 'unpredictably' food insecure from becoming chronically so once emergency programmes are wound down;
- how to deal with weak government involvement especially in southern Africa;
- how to resist pressure for transfers to be dominated by food aid;
- improving understanding of different sources and types of vulnerability, and matching risk management strategies to different vulnerabilities;
- dealing with the complexities of engaging in protracted political crises, where interventions conceived at a purely technical level, for example to support livelihoods, risk being manipulated in such a way as to intensify rather than ameliorate the mix of hazards faced by marginalised groups.

Yet it is encouraging that these issues are gaining prominence in the development discourse in Africa, if only out of dire necessity. Approaches that emerge are likely to have far-reaching policy implications in other parts of the world and beyond the realm food security.

## 5. Tools for better integrating disaster risk reduction into development

### Summary

This section sets out some tools or entry points that can be used for incorporating disaster risk reduction into international and national development agendas. These are:

- Poverty Reduction Strategy Papers
- UN Development Assistance Frameworks
- Donor country assistance strategies/plans
- National Adaptation Programmes of Action for climate change
- Partnership agreements with implementing agencies and governments
- Programme and project appraisal guidelines
- Early warning and information systems
- Risk transfer mechanisms
- International policy forums such as the World Conference on Disaster Reduction, the OECD-DAC and the Commission for Africa.
- Performance targets and indicators for mainstreaming disaster risk reduction.

### Introduction

152. Successful integration of disaster risk reduction into development is not something bilateral donors can achieve by the addition of a new programme, a new policy document or even a new department. Rather, it is a shift in approach towards supporting more risk-reducing forms of development, an approach which will need to pervade all operations, programmes and departments. The mechanisms for achieving this are many and diverse, will differ between donors, and do not need to be elaborated here.

153. There are, however, a number of key tools or entry points which offer opportunities for putting disaster risk reduction onto international and national development agendas and setting goals and priorities. These are briefly outlined here and include PRSPs, UNDAFs, donor country assistance strategies/plans, National Adaptation Programmes of Action for climate change, various partnership agreements with implementing agencies and governments, tools such as programme and project appraisal and early warning systems. There are also many relevant international initiatives and policy forums, such as the World Conference on Disaster Reduction, the OECD-DAC and the Commission for Africa.

### Poverty Reduction Strategy Papers (PRSPs)

154. PRSPs provide the basis of all World Bank and IMF concessional lending and for debt relief under the enhanced Heavily Indebted Poor Countries (HIPC) Initiative. They are also increasingly used by DFID and other donors as a basis for their bilateral support. PRSPs have become a framework for development aid allocation for the 32 countries (17 in Africa) that had prepared full PRSPs by mid-2003, and several more at the Interim PRSP stage. PRSPs describe a country's macroeconomic, structural and social policies and programmes to promote growth and reduce poverty, as well as associated external financing needs, and are in principle prepared and 'owned' by governments through a consultative process involving civil society and development partners.

155. Given the pre-eminence of PRSPs in HIPC governments' efforts to address poverty and its cross-sectoral approach, they provide an important opportunity for setting out ways in which disaster risk reduction concerns can be integrated into national poverty-focussed

development and associated development assistance. However, there are several weaknesses in current PRSPs both in processes and outcomes.<sup>70</sup> Awareness of their existence still tends to be limited to a handful of key government and non-government actors, and they are seen to be primarily donor-driven rather than nationally owned. Furthermore whether PRSPs can contribute to poverty reduction and achievement of MDGs also depends on longer-term complementary reforms in public sector governance, and whether they are backed by real implementation capacity.<sup>71</sup> Aspects of disaster risk reduction have been incorporated into some PRSPs (see Box 15), but emphasis in this area tends to be primarily on early warning and response rather than on preventive strategies and falls short of a holistic multi-risk analysis.

156. A further constraint to the prospects of PRSPs becoming effective vehicles for ensuring that development activities actually reflect risk reduction concerns is that they are generally under-resourced in relation to their objectives. Donors have critical roles to play in ensuring support for key components with the potential to reduce disaster risk. Also, contrary to their original intention, in many instances they tend to reinforce existing development models rather than forcing governments and their donors to re-evaluate their approach to development.

#### Box 15: Examples of PRSPs which address disaster risk

Many PRSPs identify disasters as a challenge for poverty reduction. Some (e.g. Bolivia and Pakistan) link disasters with fluctuating macroeconomic performance. Yet of 32 completed PRSPs presented to the World Bank and IMF by mid-2003, only eight were identified by the World Bank's Hazard Management Unit as incorporating aspects of hazard risk management. Some examples of attention to risk reduction in PRSPs are the following:

- **Ethiopia's** PRSP focuses on reducing vulnerability to drought in the longer run by developing water resources, improving agricultural technology, and (controversially) resettling people from densely settled food-insecure areas. In its water sector strategy, it outlines a series of measures to reduce the risks of flooding. It presents the National Policy on Disaster Prevention and Management as a new approach to tackling recurrent food emergencies through linking relief resources with development interventions. Response capacities will be boosted through improved early warning systems, emergency food and cash reserves, and studies of vulnerability in food-insecure districts.
- **Malawi's** PRSP 'recognises the impact of weather-related calamities on the poor and the need to put in place adequate disaster management measures'. Preparedness measures will focus on improving or using established global, regional and national early warning systems. The Department of Disaster Prevention, Relief and Rehabilitation will be responsible for Emergency Relief Operations and rehabilitation projects. A safety nets programme will address chronic and 'transient' poverty through a combination of welfare transfers, targeted nutrition intervention, public works and targeted agricultural input provision.
- **Mozambique's** PRSP also highlights the high degree of vulnerability of the poor to disasters, and outlines measures for natural disaster management which include establishing a contingency plan for disasters and strengthening the capacity of the National Meteorological Institute to predict extraordinary weather patterns.
- **Vietnam's** PRSP aims by 2010 to reduce by half the number of poor people falling back into poverty due to disasters and other risks. This is to be done through an integrated approach that incorporates employment generation for the vulnerable, support to encourage children of vulnerable families to attend school, the retrofitting of schools for seismic resistance and the development of an Emergency Relief Fund.
- The **Bangladesh** Interim PRSP has a similarly integrated approach placing disaster risk management within mainstream development planning and programme/project design validation processes. The significance of natural disaster in Bangladesh is reflected in a dedicated annex on Disaster Vulnerability and Risk Management.

<sup>70</sup> Oxfam (2004)

<sup>71</sup> Booth (2003)

157. Thus the PRS process provides an entry point for bilateral donors to promote a risk reduction agenda in at least three ways:

- Collaborating with the World Bank's Hazard Management Unit, they can seek to influence the Bank's support (i.e. guidelines for and evaluation of country progress reports and interim/full PRSPs) for the PRS process in the direction of encouraging governments to integrate risk reduction considerations into key PRSP components. Guidelines might, for example, include a recommendation for a national working group to compile hazard and vulnerability profiles and consider how appropriate risk reduction strategies can be incorporated into the PRSP.
- At country level they can offer targeted support and advice to governments in the preparation of PRSPs, highlighting opportunities for integrating risk reduction concerns into sectoral strategies and indicating willingness to support those areas in which these concerns are addressed.
- They can ensure that funding is available for implementation of risk reducing activities that are included in PRSPs. While the shift from project-based aid to general or sector budget support means that the scope for earmarking funds for specific activities is reduced, donors can nevertheless ensure that risk reduction principles are highlighted in funding agreements and in systems for ensuring accountability. There is also scope for supporting specific activities outside the framework of direct budget support, including through UN agencies and NGOs.

#### *UN Development Assistance Frameworks (UNDAFs)*

158. A noteworthy outcome of the UN Secretary General's efforts to improve coordination across the UN system at country level has been the Common Country Assessment (CCA) and UN Development Assistance Framework (UNDAF), designed to enhance the UN Country Teams' collective analysis and programming respectively in support of national goals and priorities, including the MDGs and PRSPs. In principle, the CCA/UNDAF process, supported by the office of the UN Development Group (UNDG), provides an entry point for "a contribution to developing measures and building capacity for crisis prevention and disaster preparedness; and where applicable to mitigation plans, post-conflict/natural disaster recovery and rehabilitation, and planning the transition from relief to development"<sup>72</sup> and for establishing the necessary partnerships (including with donors) for this purpose. In parallel the UNDG has also established a Joint Working Group on Transitions with the UN Executive Committee on Humanitarian Assistance (ECHA) to consider relief-development transition issues in natural disasters and complex emergencies, including how the UN Consolidated Appeals Process for emergencies relates to the UNDAF. So far these initiatives have yet to translate into a systematic incorporation of disaster risk reduction concerns into the UN development planning process, but this could change if more substantial donor support were to be targeted to this area.

#### *Country assistance plans*

159. All donors produce strategies or plans for countries in which they fund development activities, based on extensive in-country consultations. For example DFID's Country Assistance Plans (CAPs), reviewed every three or four years, set out objectives and activities of DFID funding as part of the international development effort and link these to poverty reduction outcomes and MDGs. These plans are based on the partner country's own poverty reduction strategy and reflect its government's priorities.

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<sup>72</sup> UNDG (2004:11)



160. Country assistance plans are a tool for both resource planning and performance management. Thus for DFID, CAPs delineate the volume and use of financial and human resources to be deployed to assist countries in reducing poverty, but also provide a framework for annual reporting on progress against local MDG indicators and DFID's Public Service Agreement. As they incorporate analysis of each country's potential for political, social and economic change and risks to the realisation of that potential, country assistance plans provide an important opportunity for assessing disaster risks and setting out how donor assistance will help address those risks. The consultations involved in formulating such assistance plans open the way to dialogue on the challenge that disaster risks pose for the national poverty reduction and development agenda, and how best to meet that challenge.

161. However, the recognition of disaster risks in country assistance plans has been uneven. DFID is at the forefront of bilateral donor efforts to address risk reduction concerns, but as yet its CAPs do not reflect systematic attention to these issues. In the CAP for Malawi, disaster risk is incorporated in the Risk Analysis with the recognition that exogenous shocks have the capacity to threaten PRSP objectives. Two important components of DFID's approach to development assistance to Malawi are the development of national safety nets and a comprehensive food security strategy, both with implications for disaster risk reduction. In other CAPs, however, the negative impact of disasters is acknowledged, but there is no explicit incorporation of disaster risk reduction issues either in the risk analysis of the country, or in the setting out of DFID's priorities. In one of the cases examined by the study team, the newly prepared CAP noted the regular occurrence and serious impact of disasters 'in specific areas', but excluded government-requested support for implementation of the new National Disaster Management Framework on the grounds that "disasters are unlikely to have a major impact on .... overall progress on the Millennium Development Goals".

162. DFID's Performance and Effectiveness Department compiles and updates guidelines for country offices to use in formulating CAPs. Present guidelines do not mention disasters. The guidelines are currently undergoing revision, and could usefully spell out how CAPs should address disaster risk and its links with national development strategies and MDGs.

### *National Adaptation Programmes of Action (NAPAs)*

163. The preparation of NAPAs is a new element among the agreements and initiatives established under the United Nations Framework Convention on Climate Change (UNFCCC). Guidelines were set out in 2001 for the development of plans that enable low-income countries to communicate proposed programmes of priority action to address the potential impacts of climate change.<sup>73</sup> An emerging principle is that they should concentrate on actions designed to combat urgent problems already caused by present-day climate variability and extremes – problems that may become more acute under future climate change unless remedial action is taken. Key among these are the impacts of extreme climatic events associated with disasters such as flooding, drought and tropical storms. Preparation of the plans is financed by the UNFCCC's Least Developed Countries Fund, and the same source may also be a vehicle for funding subsequent implementation of the priority actions.<sup>74</sup>

164. NAPAs need to be fully integrated with national development and poverty reduction strategies.<sup>75</sup> They must focus not just on technical responses, but also on wider societal and institutional adaptation that enhances resilience to shocks, including poverty reduction and improved resource management. The extent to which NAPAs can actually promote these linkages under the current funding processes remains to be seen. The NAPA initiative is still at an early stage, with the first countries due to submit plans within 2004 and 2005. Though it is premature to assess how effectively they might operate as a vehicle for integrating disaster

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<sup>73</sup> UNFCCC (2001)

<sup>74</sup> Schipper *et al.* (2003); UNFCCC (2002)

<sup>75</sup> Huq and Khan (2003)

risk reduction into development, generic institutional barriers that might hinder integration have been identified. Integrating climate change adaptation with broader concerns places special demands on sectoral coordination and policy-making practices. According to UNFCCC, efforts should be made to create a more enabling environment within countries through: education and awareness-raising on climate change and its impacts; development of skills necessary for implementing adaptation strategies; promoting cross-sectoral approach to policy-making; and developing policy and planning frameworks that can accommodate climate change concerns.<sup>76</sup>

### *Partnership agreements with implementing agencies and governments*

165. The channelling of a large portion of bilateral aid through multilateral agencies and NGOs is governed by agreements which specify strategies, objectives and outcomes. In DFID's case, Institutional Strategy Papers set out strategies for working with multilateral agencies to increase their poverty focus and effectiveness, while Partnership Programme Agreements with NGOs provide funding for 3 to 5 years based on agreed outcomes which contribute to overall objectives. Such agreements provide an important opportunity for bilateral donors to promote the incorporation of disaster risk reduction principles into the implementation of programmes and projects that they fund, as well as to support agencies such as IFRC which work on disaster issues. Guidelines for preparation of such agreements should reflect these concerns.

166. Donor agreements with recipient governments, including for direct budgetary (either general or sector specific) and programme/project level support, also provide opportunities for incorporating principles of disaster risk reduction, based on the assessment of risk and vulnerability as an integral part of the design of programmes. For example, disaster risk assessment can be built into programmes that develop infrastructure such as school buildings in disaster-prone areas.

### *Programme and project appraisal guidelines*

167. DFID maintains a set of Office Instructions which provide guidance on submitting and assessing funding applications for projects and programmes. These do mention assessment of risks to achieving objectives of proposed activities and environmental impact, for example as a component of logframes, in a 'Risks and undertakings' section or an environmental issues annex for project submissions. However the guidelines do not at present give explicit attention to assessing ways in which activities might be threatened by or – just as important – might influence disaster risks.<sup>77</sup> Introducing disaster risk reduction considerations into such standard procedures, including project appraisal guidelines along the lines suggested in Box 13, could be one mechanism for ensuring that activities donors support are disaster risk aware.

### *Early warning and information systems*

168. Early warning and information systems are key tools for mitigating disaster impacts. In the past 20 years considerable progress has been made in improving systems for providing short-term advance information on extreme weather events, flood surges, volcanic eruptions and food crises which allow timely action to be taken in the realm of disaster management. Yet there is also a need for information systems to support longer-term risk assessment and monitoring, focussing on vulnerability as well as hazards, as a basis for disaster risk reduction initiatives within a development framework.

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<sup>76</sup> UNFCCC (2002)

<sup>77</sup> DFID (2003) has however produced an Environmental Guide which describes procedures for assessing and addressing the environmental benefits/opportunities or risks that are likely to result from proposed interventions. These include an 'environmental screening note' which must accompany intervention proposals valued at over £1 million.

169. In Africa, the main effort has gone into food security early warning systems, which operate at national level in southern, eastern and Sahelian Africa and are supported by respective regional intergovernmental organisations and the international systems of FAO and USAID. These have become generally effective in providing timely assessments of seasonal conditions for crops and pastures, generating national food balance estimates, and more recently identifying outcomes for different livelihood groups. Their main audiences are governments of affected countries, donors and humanitarian agencies.

170. In the case of storms and floods, an important function of early warning systems is to communicate warnings directly to affected populations. The record is mixed. Loss of life in Nicaragua and Honduras due to Hurricane Mitch could have been significantly reduced had communities in remote areas been better warned.<sup>78</sup> In Bangladesh some 30,000 community-based volunteers spread the word when cyclone warnings are broadcast by radio, though the provision of user-friendly information to farmers on flood surges in North Bangladesh could be much improved, while in Andhra Pradesh artisanal offshore fishers are exposed to cyclone risks because they have no radios to receive early warning messages.

171. Integration of early warning systems with public alerts, evacuation and emergency response systems across sectors is crucial for disaster management. In this regard, systems that are community-based can sometimes be more effective than top-down centralised systems because they can be more directly integrated into local response and risk reduction strategies. Box 16 describes how community-based initiatives in Central America appear to have contributed to saving lives during Hurricane Mitch by linking early warning into preparedness and response at local level.

#### **Box 16: Community-based early warning systems & preparedness in Central America**

Hurricane Mitch swept through Central America in 1998, causing severe impacts in Honduras, Nicaragua, El Salvador and Guatemala. The death toll from the high winds, flooding and landslides generated by this storm has been put at 27,000. Mitch destroyed or severely damaged 80,000 homes, 2,000 drinking water systems and hundreds of bridges, and heavily impacted on the region's agriculture – causing damage to subsistence crops to the value of US\$ 155 billion in Honduras alone. IFRC claims that the disaster put economic development in Honduras back 20 years. Osorio suggests that infrastructure damage 'set the Honduran water sector back in its water coverage services to a similar level to that of three decades earlier'.

The impacts of Mitch fell most heavily on the poorest, especially on those living and working in marginal lands on steep slopes and floodplains. But a few examples have emerged from the region that illustrate how simple disaster risk reduction activities rooted within communities in hazard-prone locations may play a significant role in reducing local deaths. In contrast with neighbouring sites, there were no deaths among the inhabitants of La Masica on the coast of Honduras, where external agencies had supported a local capacity-building programme for risk reduction featuring a community-based flood early warning system linked to preparedness training. Similarly, there was no loss of life along the Coyolate River in Guatemala, where communities had jointly worked to map flood hazard, establish a high-rainfall alarm system, monitor river levels and build evacuation shelters.

*Source:* Wisner *et al.* (2004); Espacios Consultores (2000); IFRC (2002a); Osorio (2003:2); Maskrey (1999); Tearfund (2004a)

172. Overall, early warning and information systems, often with substantial donor assistance, have significantly improved in terms both of information reliability/timeliness and linkages to early response, saving many lives in disasters. Common shortcomings, however, are that while they establish the means to generate or acquire large volumes of data, including remote sensing data, they are weak at analysis and interpretation and sometimes weaker still at communicating their findings to stakeholders in a useful form which leads to action. In many cases their approach is technical, short-term and oriented towards needs for

<sup>78</sup> UNDP (2004:39)

humanitarian assistance. They are far less attuned to generating knowledge that would improve understanding of longer-term socio-economic and political processes responsible for vulnerability (including conflict), or eliciting action to reduce that vulnerability.

173. Better analysis of this latter kind could provide a solid foundation for designing strategies to integrate risk reduction into development processes at national and sub-national levels. This will require appropriate levels of investment in expertise, adequate resourcing of system operation, and a commitment to intersectoral collaboration to strengthen information-action links.

### *Risk transfer mechanisms*

174. An emerging area of interest is the potential for financial instruments of risk management in developing countries. The World Bank, for example, is exploring the scope for promoting a range of instruments including public-private partnerships, perhaps linked to corporate social responsibility initiatives, to offer affordable insurance services that would spread the burden of disaster risks for individuals or for governments. These include studies on the feasibility of weather-forecast-based insurance schemes in Ethiopia, Morocco, Nicaragua and Tunisia which would compensate farmers for crop losses due to drought or other extreme weather events. Being based on verifiable weather events rather than actual losses, such schemes could be relatively easy to administer and could be marketed via banks, farm cooperatives and microfinance organisations.<sup>79</sup> In another example, the Turkish Catastrophe Insurance Pool scheme inaugurated in September 2000 obliges private residential property owners to take out a basic level of cover against earthquake loss.<sup>80</sup> Schemes might also cover governments, especially of smaller states, against the massive fiscal impacts of disasters, as is the aim of the Commonwealth and Small States Disaster Management Scheme which is designed for countries with populations under 1.5 million.

175. However there are challenges. Large volumes of covariate risk (i.e. risk that affects many people at once, as is the case in disasters) could over-expose national service providers and requires mechanisms to spread the risk across international reinsurance markets. Recent developments in such markets, such as catastrophe bonds, in principle provide opportunities to harness the necessary instruments to link world financiers with poor people. Yet many individuals most exposed to natural hazards in poor countries would be unlikely to be able to afford premiums without some assistance, and prospects for 'corporate social responsibility' as a source of such assistance seem limited. Governments with donor support could, however, fill the gap through well designed social protection programmes, perhaps in partnership with private sector financial service providers.

### *International initiatives and policy forums*

176. There are a great many international policy forums at which bilateral donors can highlight and promote disaster risk reduction concerns, including world conferences and summits on related issues (e.g. economic and social development, sustainable development, climate change, food, trade etc.). Coinciding with publication of this Study is the intergovernmental World Conference on Disaster Reduction (WCDR) being held in Kobe in January 2005. The preparatory conferences held in May and October 2004 revealed a significant improvement in international awareness of relevant issues since the beginning of the IDNDR, though there was a reluctance to include technological hazards or quantifiable targets on the part of some of the bigger players. The follow-up to the WCDR over the coming years will offer a range of opportunities for international collaboration in priority areas of action identified at the Conference.

177. DFID and other bilateral donors are working through OECD's Development Assistance Committee to harmonise and coordinate their own approaches to development across a

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<sup>79</sup> Varangis (undated)

<sup>80</sup> Gurenko and Lester (2001)

range of issues including direct budgetary support, PRSPs and development-security links. How best to integrate disaster risk reduction into development could be highlighted as a special issue in establishing agreements on principles of good practice.

178. The February 2004 launch by the UK Prime Minister of the Commission for Africa, comprising a group of politicians and opinion formers from Africa and around the world, signals a more concerted attempt to tackle development failure on that continent. The Commission will provide a comprehensive assessment of policy on Africa (both within Africa and internationally): where it has worked, where it has failed, where more could be done, and where more support is needed from the international community. The Commission will aim to generate increased support for the G8 Africa Action Plan, the New Partnership for African Development (NePAD) and other processes contributing to poverty reduction in Africa. The inclusion of disaster risk concerns in the main themes of the report may provide an influential voice of advocacy for incorporating disaster risk reduction in policies and programmes both of individual country governments and of the major bilateral and multilateral donors to Africa.

### *Risk reduction performance targets and indicators for donors*

179. Tearfund has developed a set of indicators and targets for use by donor organisations in measuring their progress with mainstreaming risk reduction<sup>81</sup>. The indicators cover all areas of mainstreaming: policy, strategy, geographical planning, project cycle management, external relations and institutional capacity, and could be applied internally or by an external auditor. Four levels of attainment are described, and guidance given for the application of suggested indicators to determine levels within each of these mainstreaming areas. This process could be a valuable tool in enabling donors to assess, in a reasonably objective and transparent fashion, their progress in incorporating disaster risk reduction both in humanitarian operations and in development policy and programming.

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<sup>81</sup> Tearfund (2004d)



## 6. Conclusions and recommendations

### 6.1 Main conclusions

1. The main finding of this Scoping Study is that *poverty alleviation, development and disaster risk reduction are strongly interdependent. Constraints to progress towards the first two of these objectives will not be adequately addressed without more attention to the third, because disasters impact substantially on livelihoods and development. Conversely, disasters are rooted in poverty and development failures, so risk reduction can only be effective as a core attribute of poverty alleviation and development.*
  - ‘Development’, judged in terms of progress towards the MDGs, is failing for large parts of the world and large groups of people. Poverty alleviation (MDG1) depends on reducing vulnerability of poor countries and poor people to disaster impacts. These occur through a range of macroeconomic and livelihood mechanisms, are broader than often supposed and hit the poor hardest.
  - Reducing hunger (also MDG1) is most closely related to poverty and to drought and floods, all amenable to risk reduction measures. These two natural hazards kill and affect more people than others put together.
  - Progress towards other MDGs is also affected by disasters and will be furthered by integrating risk reduction into development. All have links with disasters and/or disaster risk reduction, in particular MDG4 (reducing child mortality), MDG6 (combating HIV/AIDS, malaria and other diseases), MDG7 (ensuring environmental sustainability) and MDG8 (developing a global partnership).
  - Disaster impacts result from people’s vulnerability to natural hazards. Many hazard risks are exacerbated by human agency. Vulnerability to hazards is closely linked to failures at all levels in the governance of development processes and to poverty.
  - Effective integration of disaster risk reduction into development will help transform ‘vicious spirals’ of failed development, risk accumulation and disaster losses into ‘virtuous spirals’ of development, risk reduction and effective disaster response. Gains include a wide range of positive impacts on progress towards MDGs. Many examples of good practice have been documented, and many of these show that disaster risk reduction can be cost-effective, although more needs to be done to make this case more convincingly through improved information and analysis.
2. Disaster risk reduction has not so far received serious attention as a facet of development, despite the increasing seriousness of disaster impacts. *This Study finds three main sets of factors to explain this, relating to a) ways that incentives, institutional organisation and funding frameworks tend to work against disaster risk reduction, b) inadequate staff exposure to and information on disaster issues, and c) the assumption that poverty-focussed development will automatically reduce disaster risk.* To different extents these constraints impact upon the approaches of bilateral donors, international agencies and governments of disaster affected countries.
3. *There are several tools or entry points that bilateral donors can use to bring disaster risk reduction more centrally into poverty alleviation and development agendas. The most important of these are statements of strategy, partnership agreements with implementing agencies and governments, and international forums.*

## 6.2 Recommendations

The following main policy recommendations emerge from this Study:

### Core recommendation

1. The core recommendation of this study is that *DFID and the wider community of bilateral donors should establish and implement time-bound strategies for incorporating the reduction of risk from disasters as a central concern of development policy and programming as well as of humanitarian work, and for promoting and supporting a risk reduction agenda amongst their various development partners globally.* The remaining recommendations concern action to be taken to achieve this end and to understand better how partner countries deal institutionally with disaster risk.

### Institutional arrangements and cross-sectoral coordination

2. *DFID and other bilateral donors need to establish appropriate institutional arrangements for promoting a development approach that is risk-aware within their own organisations.* It is beyond the scope of this study to suggest in any detail what might work best in this regard. Suggestions might include a Disaster Risk Reduction Unit or Team, or a task force and/or working group drawn from several divisions/departments, or some combination of both. What is important, however, is that the institutional focus for risk reduction should be outside but linked to the humanitarian wing of the agency. It would need to be active, interdisciplinary and outward looking, backed at senior levels across the organisation and able to draw upon a strong training and research capacity.
3. *There is a need for measures to improve cross-sectoral communication and understanding of risk reduction issues and responsibilities within donor organisations.* In particular, interaction between humanitarian and development staff needs to be increased with a view to mapping, in practical and ethical terms, the interface between their respective spheres of activity at different levels. The aim should be to ensure that risk reduction measures are integrated into interventions before, during and after disaster events in a coherent fashion.
4. The regularity of disasters of particular types in particular parts of the world suggests merit in *bringing together professionals along the axes of geographical and sectoral concern to draw up new ways of working at the humanitarian-development interface.* Using a multi-hazard approach, these should address linkages between weather-related disasters, HIV/AIDS and malaria, chronic and acute food insecurity and conflict in Africa, and ways in which emergency programmes can best relate to safety nets, appropriate roles for food aid, and protection/rebuilding of assets and livelihoods.

### Operational guidelines and training

5. *Guidelines for preparing strategy papers and funding agreements should be amended to require up-to-date disaster risk assessment for the country and its main regions, analysis of how risks are being addressed and identification of additional initiatives to be undertaken if they are not being properly managed.* These include guidelines for donor country assistance plans, programme and project memoranda, institutional strategy papers and partnership agreements. Guidelines for project appraisal should be further developed to include analysis of risks from natural hazards and of options for reducing vulnerability. Guidelines should highlight the opportunity presented by donor-government consultations for dialogue on how best to mitigate/manage disaster risk. Awareness and observance of these guidelines, and of the wider role of disaster risk reduction in development, will need to be promoted through existing or new training activities for headquarters and field-based donor staff, and among government staff in partner countries.

### *Promoting risk reduction at national level ...*

6. *Maximum use should be made of PRSPs as a key entry point for promotion of a disaster risk reduction agenda in the poorest countries.* Bilateral donors should use their influence with the World Bank, Regional Development Banks and the IMF, including working with the Bank's Hazard Management Unit, to ensure that this agenda is strongly represented in support and guidance given for the PRS process and in evaluation of country PRSPs. Country and regional donor offices can also offer support and advice to governments in recognising opportunities for incorporating risk reduction concerns into the PRSP. Crucially, they can help to ensure adequate resourcing for implementation of risk reduction activities included in the PRSP through a variety of available funding routes, from direct budgetary support agreements which highlight overall risk reduction concerns to project or programme support directly or through UN agencies and NGOs.
7. *Bilateral donors should encourage and support the incorporation of disaster risk reduction concerns within the UN's CCA/UNDAF process at country level.* UNDAFs provide a complementary entry point for enhanced donor support for the coordination of UN agency work to promote risk reduction at country level, and for improving approaches to realising synergies between humanitarian and development efforts.
8. *Consultations leading up to the preparation of country assistance plans should be used by donors as an opportunity to promote political will and design programmes of support for risk reduction at national and sub-national levels.* These may include:
  - technical assistance for studies on risk (hazard risk assessments, factors determining vulnerability, community level risk reduction initiatives and other good practice examples etc.);
  - support for setting up or improving structures for rigorous disaster risk and impact monitoring, including early warning and information systems;
  - training and policy development on disaster risk reduction;
  - specific risk reduction investments such as cyclone shelters or retrofitting of school buildings and hospitals.
9. *Generating political will for disaster risk reduction at national level* should be a prime objective of interaction occasioned by consultations on, for example, PRS processes and country assistance plans, both with government and civil society organisations. The aim should be to counter disincentives, promoting impetus for political engagement in risk reduction. Assistance can also be provided for the establishment of legislative frameworks for national disaster management, as well as for their implementation.<sup>82</sup>
10. *'Weak and failing states' should not be automatically excluded from assistance for disaster risk reduction.* Nevertheless special measures need to be taken to ensure acceptable standards of accountability and to avoid counterproductive impacts where assistance is likely to be manipulated for sectional gain.
11. *Donors should explore the scope for promoting financial instruments for risk management, for example affordable insurance schemes to transfer disaster risk, including through partnership arrangements with private sector financial service providers.* This should build on investigations already undertaken in this area, for example by the World Bank.

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<sup>82</sup> See for example South Africa's newly gazetted National Disaster Management Framework (<http://sandmc.pwv.gov.za/WebDocuments/framework.pdf>)

### ... within international and regional organisations and forums...

12. *Donors should expand their support for and help to improve the effectiveness of disaster risk reduction work in international and regional organisations and forums.* These include UN agencies (UNDP-BCPR, Habitat, FAO, WHO and the regional UN Commissions UN-ECLAC, UN-ESCAP and UN-ECA which have taken regional leads in disaster risk reduction issues), the EC (DIPECHO and the Development Directorate), IFRC and ProVention, and other regional organisations such as IGAD and SADC in Africa, CEPREDENAC in Central America, ADPC and ADRC in Asia which strive to develop strategies for addressing disaster risk globally or within their sectoral or regional remits. Support for and efforts to enhance the International Strategy For Disaster Reduction as an international platform for disaster reduction, and for the work of its Secretariat and Task Force, will help promote awareness at all levels of the importance of disaster reduction as a component of sustainable development. As already mentioned, a disaster risk reduction agenda can also be supported via influencing the policy frameworks of major lending institutions (World Bank, IMF and regional banks). International NGOs are developing useful approaches to poverty-vulnerability links which deserve support. International forums such as the OECD-DAC, the Commission for Africa, the World Conference on Disaster Reduction and its follow-up, and the Millennium Summit +5 in September 2005 present opportunities to shape the agenda and foster the necessary political will for the future evolution of risk reduction as a development concern.

### ... in the media...

13. *Bilateral donors, directly and through their development partners, could do much more to encourage national and international media to take a greater interest in and help raise awareness of risk reduction issues.* Major hazard events which attract media attention also provide context-specific opportunities for agencies to highlight how much worse impacts might have been without mitigation measures – or conversely how impacts might have been avoided if such measures had been taken. National media in affected countries often take their cue from international networks, with the potential for beneficial effects in generating public awareness and political pressure in favour of risk reduction.

### ... and in research and education

14. *Support should also be expanded for research on key issues in disaster risk reduction.* This should include support for NGO applied research as well as national, regional and international research initiatives such as the Indicators for Disaster Risk Management in the Americas project, Universidad Nacional de Colombia<sup>83</sup>, LA RED in Latin America, PeriPeri and MANDISA in Africa and Duryog Nivaran in Asia, the Disaster Risk Index developed by UNDP and UNEP/GRID, the Global Disaster Risk Hotspots project of the ProVention Consortium led by the World Bank and Columbia University, and CRED at the Université Catholique de Louvain in Belgium. DFID, for example, should consider funding a Development Research Centre for disaster mitigation studies, linked to a new postgraduate teaching programme in this area. Priority areas for research include the following:

- Conceptual and analytical work to bring together approaches of different disciplines and areas of research, for example to explore how disaster risk and impacts are related to climate change, urbanisation, HIV/AIDS, governance and conflict
- Improvement of systems for the collection and analysis of information on disasters and their immediate and longer-term impacts, including sub-national records of disaster events

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<sup>83</sup> See Footnote 69 on page 42 for details.

- Major issues of governance (including corruption, bureaucracies, weak and failing states and the role of civil society) and their impacts on creating conditions of risk and in contributing to risk reduction and response
- Short and longer-term impacts of disasters on health and livelihoods, and factors determining household and community decisions on coping with and adapting to disaster impacts and investing in risk reduction initiatives
- Analysis of existing risk reduction initiatives, evidence of their effectiveness and development of tools for assessing their relative costs and benefits, including long-term and indirect ones
- Continued research on minimising weather-related and geological hazards and their interactions with other hazard types in leading to disaster impacts among vulnerable people.

### *Evaluating progress in mainstreaming disaster risk reduction*

15. Donor agencies should develop a suitable scheme of performance targets and indicators to assess their progress in integrating disaster risk reduction into both humanitarian and development policies and programming.<sup>84</sup> Such targets and indicators should be time-bound, and included in risk reduction strategies as benchmarks for subsequent reviews of performance and for accountability and learning purposes. They will do much to ensure that, over time, staff not only identify with but can practically navigate the process of bringing to fruition stated organisational commitments to reducing the impacts of disasters around the world.

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<sup>84</sup> That being developed by Tearfund offers a useful 'template' for this purpose.



## Bibliography

- Adam Fforde & Associates (2003). *Report on residential clusters research in An Giang, Dong Thap and Long An provinces in the Mekong Delta, Vietnam*. Report for Care International in Vietnam.
- Adams, W.M. (1990) *Green Development: Environment and Sustainability in the Third World*, Routledge, London
- Adger, W.N. (1996) *Approaches to Vulnerability to Climate Change*, CSERGE working paper # 9, University of East Anglia, Norwich.
- Adger, W. N., Kelly, P. M. and Ninh, N. H. (eds.) (2001) *Living with Environmental Change: Social Resilience, Adaptation and Vulnerability in Vietnam*. Routledge, London.
- Adger, W.N., S. Huq, K. Brown, D. Conway, M. Hulme (2003) 'Adaptation to climate change in the developing world', *Progress in Development Studies* 3,3: 179–195
- Alexander. D. (1989) 'Urban Land Studies', *Progress in Physical Geography*, 13 (2), 157-191
- Barnett A & Whiteside A. (2001) 'The World Development Report 2000/1: HIV/AIDS still not properly considered!', *Journal of International Development*, 13: 369-376.
- Barnett T. (2004), Editorial: The cost of an HIV/AIDS epidemic. *Tropical Medicine and International Health*, 9 (3): 315-317.
- Barrett C.B. & Maxwell, D. (forthcoming) *Food Aid After Fifty Years: Recasting Its Role*, London: Routledge. Draft chapters available at [http://aem.cornell.edu/faculty\\_sites/cbb2/foodaid.html](http://aem.cornell.edu/faculty_sites/cbb2/foodaid.html)
- Benson, C and E.J. Clay (2004) *Understanding the Economic and Financial Impacts of Natural Disasters*, Disaster Risk Management Series paper # 4, World Bank, Washington DC
- Benson, C. (1997) *The economic impact of natural disasters in Fiji*. Working paper #97. Overseas Development Institute, London
- Benson, C. and E. J. Clay (2003), "Bangladesh: Disasters and Public Finance", *Disaster Risk Management Working Paper Series No. 5* (Washington DC: World Bank, 2002), [www.proventionconsortium.org/files/Bangladesh.pdf](http://www.proventionconsortium.org/files/Bangladesh.pdf)
- Benson, C. and J. Twigg (forthcoming) '*Measuring Mitigation*': *Methodologies for Assessing Natural Hazard Risks and the Net Benefits of Mitigation – A Scoping Study*, Phase 1 report (draft – May 2004), ProVention Consortium Secretariat, Geneva
- Booth, D. (2003), "Introduction and Overview", *Development Policy Review*, Vol. 21, No. 2, pp. 131-159.
- Buchanan-Smith, M. and I. Christoplos (2004) 'Natural disasters amid complex political emergencies', *Humanitarian Exchange*, 27 (July)
- Cannon, T., Twigg, J. and Rowell, J (2003) *Social Vulnerability, Sustainable Livelihoods and Disasters*. Report to DFID Conflict and Humanitarian Assistance Department (CHAD) and Sustainable Livelihoods Support Office, London.
- CARE (2002) 'Presentation on CARE's Livelihoods Approach for NRAC '99, Michael Drinkwater & Tamara Rusinow'. [www.careinternational.org.uk/resource\\_centre/livelihoods/](http://www.careinternational.org.uk/resource_centre/livelihoods/) (accessed 10-May-04)
- Christie, F. and J. Hanlon (2001) *Mozambique and the Great Flood of 2000*, James Curry, Oxford
- Clarke, W.C. and R.R. Thaman (1993) *Agroforestry in the Pacific Islands: Systems for Sustainability*. Tokyo, United Nations University Press.
- Clay, Daniel (1998) 'Food Aid Targeting in Ethiopia: A Study of Household Food Insecurity and Food Aid Distributions', Market Analysis Note #6, Grain Market Research Project, Ministry of Economic Development and Cooperation, Addis Ababa, March
- Clay, Edward (2000), 'Reforming Food Aid: time to grasp the nettle', *ODI Briefing Paper*, No.1, Overseas Development Institute, London, January

- Clay, Edward (2003), 'Responding to change: WFP and the global food aid system', *Development Policy Review*, 21(5-6):697-709
- De Waal, A and A. Whiteside (2003) "New Variant Famine: AIDS and the food crisis in Southern Africa", *The Lancet*, 362:1234-37, October
- Dercon, S. (2002), *Income Risk, Coping Strategy and Safety Nets*, UNU-WIDER Discussion Paper 2002/22.
- Devereux, S. (2004) 'Food Security Issues in Ethiopia: comparisons and contrasts between lowland and highland areas', Seminar organised by the Pastoralist Communication Initiative, UN-OCHA, Addis Ababa, 16 February
- DFID (1997) *International Development White Paper*, HMSO
- DFID (2000) *Eliminating World Poverty: Making Globalisation Work for the Poor*, DFID: London
- DFID (2002) *Tools for Development: a handbook for those engaged in development activity*, Version 15, DFID, London, September
- DFID (2003), *Environment Guide – a guide to environmental screening*, DFID, London
- DFID (2004a), *Partnership for Development – DFID's Country Plan in India: Country Assistance Plan 2004-2008*, DFID, London
- DFID (2004b), *Disaster Mainstreaming in DFID Orissa Programmes*, mimeo, DFID-India, New Delhi.
- DFID (2004c), *Climate Change and Poverty – making development resilient to climate change*, DFID, London
- DMSLP (2004) *Report on Informal Settlement Fire Occurrence and Loss Cape Town Metropolitan Area 1995 – 1999*. Disaster Mitigation for Sustainable Livelihoods Programme, University of Cape Town.
- Duffield, M. (2001), *Global Governance and the New Wars: the Merging of Development and Security*, Zed Books, London & New York
- EIIP (1998) 'Does domestic violence increase after disaster?' Emergency Information Infrastructure Partnership (EIIP) <http://www.emforum.org/vlibrary/domestic.htm>
- Erdik, M. (2000), "Report on 1999 Kocaeli and Düzce (Turkey) Earthquakes", paper presented at the conference EuroConference on *Global Change and Catastrophe Risk Management: Earthquake Risks in Europe*, IIASA, Laxenburg Austria, July 6-9, 2000, available online at <http://www.iiasa.ac.at/Research/RMS/july2000/Papers/erdik.pdf>
- Espacios Consultores (2000) Independent Evaluation Expenditure of DEC Central America Hurricane Appeal Funds. Final report, San Jose, Costa Rica
- Fox M.P., S. Rosen, W.B. MacLeod (2004) The impact of HIV/AIDS on labour productivity in Kenya. *Tropical Medicine and International Health*, 9: 318-324.
- Global Initiatives (2003), *Global Humanitarian Assistance 2003*, prepared by Development Initiatives for the Humanitarian Financing Work Programme: <http://www.globalhumanitarianassistance.org/ghafr2003.htm>
- Gurenko, E. and R. Lester (2001) 'Natural Disasters Funding in Emerging Markets', World Bank, October
- Holden, Sue (2003) *AIDS on the Agenda: Adapting Development and Humanitarian Programmes to Meet the Challenge of HIV*, Oxfam GB, in association with ActionAid and Save The Children.
- Huq, S. and Khan, M. (2003). Mainstreaming National Adaptation plans. *Tiempo Climate Cyberlibrary* 49.
- IDS (2002) *Learning the Lessons? Famine in Ethiopia 1999-2000*, (video), Institute of Development Studies, University of Sussex, Brighton, UK
- IFRC (2002a) *World Disasters Report 2002: Focus on Reducing Risk*, International Federation of the Red Cross and Red Crescent, Geneva.

- IFRC (2002b) *Sudan: from risk to opportunity, flood risk reduction*, International Federation of the Red Cross and Red Crescent, Geneva
- IFRC (2003) *World Disasters Report 2003: Focus on Ethics in Aid*, IFRC/RC, Geneva.
- IMF (2003) *Fund Assistance for Countries facing Exogenous Shocks*, a report by the Policy Development and Review Department, International Monetary Fund
- IPCC (2001) *Climate Change 2001: Impacts, Adaptation, and Vulnerability. Summary for Policymakers*. A Report of Working Group II of the Intergovernmental Panel on Climate Change.
- MARD (2003) 'Living with floods in the Mekong River Delta of Vietnam'. Proceedings of the International Seminar on Flood Management, Ministry of Agriculture and Rural Development, Hanoi 17-21 Nov. 2003, pp85-92
- Maskrey A. (1999) Reducing Global Disasters, In J. Ingelton (Ed) *Natural Disaster Management*, pp84-86, Tudor Rose: Leicester
- Mason, B., Pyle, D., Dade, B., Jupp, T (2004) Seasonality of Volcanic Eruptions, *Journal of Geophysical Research*, 109
- Merrett, S., Allan, J.A. and Lant, C. (2003) 'Virtual water – the water, food and trade nexus, useful concept or misleading metaphor?' *Water International*, 28 (1), 4 - 11
- Morduch, J. (1995), 'Income Smoothing and Consumption Smoothing', *Journal of Economic Perspectives*, Vol. 9, pp. 103-114.
- NAO (2003) *Department for International Development: Responding to Humanitarian Emergencies*, report by the Comptroller and Auditor General, National Audit Office, HC 1227 Session 2002-2003: 5 November 2003, London
- Netherlands Red Cross (2003) *Preparedness for Climate Change: Implications for the International Federation of Red Cross and Red Crescent Societies*, <http://www.climatecentre.org/>
- O'Keefe, P., Wisner, B. (1975) African Drought: The State of the Game. In: Richards, P. (Ed.), *African Environment: Problems and Perspectives*. International African Institute, London.
- OECD (2001) Country Reviews, OECD Economic Surveys Turkey, January, OECD
- OECD (2004) Statistical Annex of the 2003 Development Co-operation Report, OECD
- Osario, C. (2003) 'Lack of freshwater: a primary concern at times of disasters' Pan-American Center for Sanitary Engineering and Environmental Sciences (CEPIS), Pan-American Health Organization (PAHO), Peru
- OXFAM (2004), "From 'Donorship' to Ownership? Moving Towards PRSP Round Two", mimeo.
- Özerden, A (2003) Disaster as manifestation of unresolved development challenges: the Marmara earthquake, Turkey. In Pelling, M (ed) *Natural Disasters and Development in a Globalizing World*, Routledge, London.
- PAHO (2003) 'Discussion Paper on the Assessment and Validation of the Guidelines for Vulnerability Reduction in the Design of New Health Facilities', International Meeting, *Hospitals in Disasters: Handle with Care*, San Salvador, 8-10 July 2003, Pan-American Health Organization
- PAHO (2004), 'Gender And Natural Disasters Fact Sheet', Women, Health and Development Program, Pan-American Health Organization, <http://www.paho.org/English/DPM/GPP/GH/genderdisasters.pdf>
- Palmer-Jones, R. and Sen, K (2003), 'What has luck got to do with it? A regional analysis of poverty and agricultural growth in India', *Journal of Development Studies*, 2003, Vol. 40, No. 1, pp. 1-31
- Pantoja, E. (2002) 'Microfinance and Disaster Risk Management: Experiences and Lessons Learned', Draft Final Report, ProVention Consortium [http://www.proventionconsortium.org/files/microfinance\\_drm.pdf](http://www.proventionconsortium.org/files/microfinance_drm.pdf)

- Paulinson, D.D. (1993) Hurricane Hazard in Western Samoa. *Geographical Review* 83, 45-53.
- Pelling, M. (1997) What determines vulnerability to floods; a case study in Georgetown, Guyana, *Environment and Urbanization*, 9 (1), 203-226
- Pelling, M. (2001) Natural Disasters? In Castree, N. and Braun, B. (Eds.) *Social Nature*, London: Blackwells, 170-188.
- Pelling, M. (2003) *The Vulnerability of Cities: natural disasters and social resilience*, Earthscan, London.
- Schipper, L., Huq, S. and Khan, M. (2003). *An exploration of "mainstreaming" adaptation to climate change*. An adaptation research workshop research/issue brief, Enhancing capacity for adaptation to Climate Change in Developing Countries, 9-12 November
- Scott, J.C. (1985) *Weapons of the Weak*. Yale University Press, London.
- SC-UK (2003). *Child drowning in the Mekong Delta: current situation and solutions*. Save the Children (UK), Vietnam, Hanoi.
- Sharp, K., S. Devereux and Y. Amare (2003) *Destitution in Ethiopia's Northeastern Highlands (Amhara National Regional State)*, Institute of Development Studies, UK and Save the Children (UK), Addis Ababa
- Sinha S.K. and M.S. Swaminathan (1991) Deforestation, climate change and sustainable nutrition security a case study of India. *Climatic Change* 19
- Swift, J (1993) Understanding and Preventing Famine and Famine Mortality. *IDS Bulletin* 4 (4), 1-16.
- Tearfund (2003), *Natural Disaster Risk Reduction: The policy and practice of selected institutional donors*, Tearfund Research Project, July
- Tearfund (2004a), *Before Disaster Strikes: Why thousands are dying needlessly each year in preventable disasters*, Tearfund Report
- Tearfund (2004b), *Bihar case-study*, mimeo
- Tearfund (2004c), *Cost benefit analysis of community level disaster mitigation and preparedness interventions in India (draft)*
- Tearfund (2004d), *Mainstreaming disaster risk reduction within institutional donors: performance targets and indicators (draft)*
- Tinh, Dang Quang (2003). 'Flood kindergarten: community need to community solution'. In World Disaster Reduction Campaign, *Living with risk: turning the tide on disasters towards sustainable development*, UN-ISDR
- Twigg, J. (2001) 'Corporate Social Responsibility and Disaster Reduction: A Global Overview', Benfield Greig Hazard research Centre, University College London
- Twigg, J. (2002), 'Lessons from Disaster Preparedness', Notes for presentation to International Conference on Climate Change and Disaster Preparedness.
- Twigg, J. (2004) *Disaster Risk Reduction: mitigation and preparedness in development and emergency programming*. Good Practice Review # 9, Overseas Development Institute, London
- Twigg, J., D. Steiner, M. Myers and C. Benson (2000), *NGO Natural Disaster Mitigation and Preparedness Projects: A Study of International Development and Relief NGOs based in the UK* (London: British Red Cross)
- UNAIDS (2004) *Report on the Global HIV/AIDS Epidemic*. Joint United Nations Programme on HIV/AIDS. June 2004. Geneva, Switzerland.
- UNDG (2004) *Common Country Assessment and United Nations Development Assistance Framework – Guidelines for UN Country Teams*, United Nations Development Group
- UNDP (2003) *World Population Prospects – The 2002 Revision*. United Nations Population Division
- UNDP (2004) *Reducing Disaster Risk: a challenge for development, a global report* UNDP, Geneva.



- UN-ECLAC (2003) : *Estimating the Socio-Economic and Environmental Effects of Disasters*, UN Economic Commission for Latin America and the Caribbean, [www.eclac.cl](http://www.eclac.cl)
- UNEP (2002) *Africa Environmental Outlook: past, present and future perspectives*, UNEP Nairobi
- UN-FCCC (2001). *Guidelines for the preparation of National Adaptation Programmes of Action*. Decision 28/CP.7, (FCCC/CP/2001/13/Add.4).
- UN-FCCC (2002). *Input of the Least Developed Countries Expert Group on the improvement of the Guidelines for the preparation of National Adaptation Programmes of Action*. (FCCC/SBI/2002/INF.14).
- UNICEF (2002). *Psychosocial impact of child drowning deaths in the Mekong River Province of Dong Thap: a preliminary assessment*. UNICEF Vietnam, Hanoi.
- UN-ISDR (2004) *Living with Risk: A global review of disaster reduction initiatives*, International Strategy for Disaster Reduction, United Nations Inter-Agency Secretariat, Geneva ([www.unisdr.org](http://www.unisdr.org))
- UNRISD (2000) *Visible Hands – Taking Responsibility for Social Development*, UNRISD, Geneva
- USAID (2002), *Windows of vulnerability and opportunity. Foreign Aid in the National Interest: Promoting Freedom, Security and Opportunity*, USAID  
<http://www.usaid.gov/fani/ch04/windows.htm>
- Varangis, P (undated) 'Hedging Your Bets', Conceptual Article, ProVention Consortium (<http://www.proventionconsortium.org/articles/hedging.htm> accessed 28-Oct-04)
- Watts M (1983) *Silent Violence: Food, Famine and Peasantry in Northern Nigeria*, University of California Press, Berkley
- WCSDG (2004) *A Fair Globalization: Creating Opportunity for All*, World Commission on the Social Dimension of Globalization, International Labour Office, Geneva
- Wisner, B & Adams (Eds.), (2002) *Environmental health in emergencies and disasters: a practical guide*, World Health Organization, Geneva  
([http://www.who.int/water\\_sanitation\\_health/hygiene/emergencies/emergencies2002/en/](http://www.who.int/water_sanitation_health/hygiene/emergencies/emergencies2002/en/))
- Wisner, B; P. Blaikie; T. Cannon; I. Davis (2004) *At Risk: natural hazards, people's vulnerability and disasters* (second edition), Routledge, London and New York
- World Bank (2001), *World Development Report 2000/2001: Attacking Poverty*, Washington
- World Bank (2004), *Natural Disasters: Eluding Nature's Wrath*, mimeo.



## Appendix A. People consulted

### A.1 DFID London

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Africa Division	<ul style="list-style-type: none"> <li>• Graham Stegmann (Director),</li> <li>• Anthony Smith (Deputy Director), Central &amp; Southern Africa Department</li> <li>• David Batt (Deputy Director), East Africa Department</li> <li>• Melinda Simmons (Deputy Head, Policy &amp; External Relations), Africa Policy Department</li> <li>• Dougie Brew, Africa Policy Department</li> <li>• Simon Mansfield, Africa Policy Department</li> </ul>
Asia & Pacific Division	<ul style="list-style-type: none"> <li>• Jeremy Clarke (Chief), Asia Policy &amp; Strategy</li> </ul>
Europe, Middle East & Americas Division	<ul style="list-style-type: none"> <li>• Roy Trivedi (Team Leader) , Morag Baird (Engineering Adviser), Tamsin Ayliffe (Social Development Adviser, Gareth Martin (Environment/Natural Resources Advisor), Europe and Central Asia Department (ECAD)</li> <li>• Jo de Serrano, Iraq Directorate, Middle East &amp; North Africa Department</li> </ul>
Policy Division	<ul style="list-style-type: none"> <li>• Michael Schultz (Deputy Director), Service Delivery Group</li> <li>• Tom Crowards, Macroeconomic Scenarios</li> <li>• Malcolm Ridout (Rural Livelihoods Advisor), Reaching the Very Poorest</li> <li>• Mark Harvey, Reaching the Very Poorest</li> <li>• Jessica Troni, Environmental Change</li> <li>• Sonya Sultan (Social Development Adviser), Poverty Reduction in Difficult Environments</li> </ul>
International Division	<ul style="list-style-type: none"> <li>• Conflict &amp; Humanitarian Affairs Department: Michael Mosselmans (Head), Peter Troy (Head, Humanitarian Team), Nigel Adams (Deputy Head, Humanitarian Team), Helen Gorie (Former Deputy Head, Humanitarian Team), Anissa Toscano (Senior Programme Officer), Claire Hickson (Governance Advisor), Lisa Pereira (Senior Programme Officer), Fenella Frost (Disaster Reduction Adviser), Olivia Harland (Assistant Disaster Reduction Adviser), Duncan Overfield (CHAD Economist), Malcolm Smart (former CHAD Economist, now in Cabinet Office Strategy Unit)</li> <li>• Matthew Morris, International Financial Institutions Department</li> <li>• Rachel Turner (Head), International Division Advisory Team</li> </ul>

### A.2 UK-based partners

Institution	Contact
Benfield Hazard Research Centre, UCL	<ul style="list-style-type: none"> <li>• Dr. Ben Wisner, Visiting Research Fellow</li> <li>• John Twigg, Honorary Research Fellow</li> </ul>
British Red Cross	<ul style="list-style-type: none"> <li>• Adam Poulter, Disaster Preparedness Adviser</li> </ul>
Natural Resources Institute	<ul style="list-style-type: none"> <li>• Terry Cannon, Reader in Development Studies</li> </ul>
Overseas Development Institute	<ul style="list-style-type: none"> <li>• Charlotte Benson, Senior Research Associate</li> <li>• Edward Clay, Senior Research Associate</li> </ul>
Tearfund	<ul style="list-style-type: none"> <li>• Sarah La Trobe</li> <li>• Prof. Ian Davis, Consultant</li> </ul>
University of Northumbria, School of Applied Sciences	<ul style="list-style-type: none"> <li>• Maureen Fordham, Programme Leader, MSc in Disaster Management and Sustainable Development</li> </ul>

### A.3 South/South-east Asia (14-21-Feb-04)

Place/Date	Institution	Contact
<b>New Delhi</b> <b>16-18 Feb</b>	DFID India	<ul style="list-style-type: none"> <li>• Charlotte Seymour-Smith, Head, Shantanu Mitra, Senior Economic Adviser</li> <li>• Nisha Jacob, Performance, Learning &amp; Strategy Team</li> <li>• Dr Virinder Sharma, Environment Adviser</li> <li>• Desmond Whymys, Health Adviser</li> <li>• Sheeja Nair, Programme Officer</li> <li>• Usha Misra Joshi, Head, Press &amp; Information</li> </ul>
	National Institute for Disaster Management, Ministry of Home Affairs	<ul style="list-style-type: none"> <li>• Madhaban Nambiar, Director</li> <li>• Prof Santosh Kumar, Policy Planning &amp; Community Issues</li> <li>• Kamal Kishore, Regional Disaster Reduction Advisor, UNDP</li> <li>• G. Padmanabhan, Emergency Analyst, UNDP</li> </ul>
	IRADe	<ul style="list-style-type: none"> <li>• Prof. Jyoti Parikh, Executive Director</li> </ul>
<b>Ahmedabad</b> <b>17 Feb</b>	Disaster Mitigation Institute	<ul style="list-style-type: none"> <li>• Mihir Bhatt &amp; colleagues</li> </ul>
	Care India	<ul style="list-style-type: none"> <li>• Dr. Philip Veigas; Amar Vaid; Ms. Jo Sharma; Prabodh Mohanty, c/o NM Prusty</li> </ul>
<b>Bangkok</b> <b>19/20 Feb</b>	Asian Disaster Preparedness Centre	<ul style="list-style-type: none"> <li>• Dr Suvit Yodmani, Executive Director</li> <li>• Brian Ward, Director Emeritus</li> <li>• Earl Kessler, Deputy Executive Director</li> <li>• Merrick Chatfield, Director, Training &amp; Education</li> <li>• Zubair Murshed, Training Manager</li> </ul>
	DFID South-East Asia	<ul style="list-style-type: none"> <li>• Simon Croxton, Rural Livelihoods Advisor</li> </ul>
	UNDP-BCPR	<ul style="list-style-type: none"> <li>• Tom Brennan, Regional Disaster Reduction Advisor</li> </ul>

### A.4 Geneva (7-10-Mar-04)

Institution	Contact
IFRC	<ul style="list-style-type: none"> <li>• Eva von Oelreich, Head, Disaster Preparedness and Policy</li> </ul>
OCHA	<ul style="list-style-type: none"> <li>• Kirsi Madi, Chief, IASC Secretariat</li> <li>• Timo Knaute, Intern to IASC Secretariat</li> </ul>
Provention Consortium Secretariat (IFRC)	<ul style="list-style-type: none"> <li>• David Peppiatt, Manager</li> <li>• Bruno Haghebaert, Senior Officer</li> </ul>
UNDP-BCPR	<ul style="list-style-type: none"> <li>• Jennifer Worrell, Deputy Head</li> <li>• Pablo Ruiz Hiebra, Disaster Programme Specialist</li> <li>• Angelika Planitz, Natural Disasters Specialist</li> <li>• Hossein Sarem Kalali, Built Environment Adviser</li> </ul>
UNICEF	<ul style="list-style-type: none"> <li>• Dermot Carty, Senior Programme Officer for Emergencies</li> <li>• Everett Ressler, Senior Project Officer for Emergency Operations</li> </ul>
UN-ISDR	<ul style="list-style-type: none"> <li>• Sálvano Briceño, Director</li> <li>• Terry Jeggle, Senior Advisor</li> <li>• Helena Molin-Valdes, Senior Officer</li> <li>• Elina Palm, ISDR Latin America Office</li> </ul>
WHO	<ul style="list-style-type: none"> <li>• Dr Alessandro Loretto, Coordinator, Health Intelligence and Capacity Building, Dept. for Health Action in Crisis</li> <li>• Dr Andre Griekspoor, Dept. for Health Action in Crisis</li> <li>• Steeve Ebener, GIS Technical Officer</li> </ul>

## A.5 Africa (20-30-Mar-04)

Location	Institution	Contact
<b>Cape Town</b> 22-23 Mar	University of Cape Town	<ul style="list-style-type: none"> <li>• Ailsa Holloway (Coordinator) and Helen MacGregor Disaster Mitigation for Sustainable Livelihoods Programme</li> <li>• Gina Ziervogel, Climate Systems Analysis Group</li> </ul>
<b>Jo'burg/ Pretoria</b> 24 Mar	Human Sciences Research Council UN/OCHA Regional Office UNDP BCPR DFID Southern Africa USAID Southern Africa Regional Office	<ul style="list-style-type: none"> <li>• Scott Drimie, Senior Research Specialist</li> <li>• Chris Kaye, Head</li> <li>• Gabriella Waaijman, Humanitarian Affairs Officer</li> <li>• Sophie Baranes</li> <li>• Tom Kelly, Regional Humanitarian &amp; Food Security Adviser</li> <li>• Harlan Hale, OFDA Regional Representative</li> <li>• David Chikodzore, Regional Advisor for Food Security</li> </ul>
<b>Nairobi</b> 25-29 Mar	UN-HABITAT  UNDP/BCPR EC CARE DFID Kenya UN-ISDR	<ul style="list-style-type: none"> <li>• Daniel Lewis, Chief, Disaster, Post-Conflict and Safety Section</li> <li>• Esteban Léon, Disaster Management Specialist, Disaster, Post-Conflict and Safety Section</li> <li>• Eric Verschuur, Programme Management Officer, Regional Technical Cooperation Division</li> <li>• Mohamed El-Sioufi, Senior Human Settlements Adviser</li> <li>• Ken Westgate, Regional Disaster Reduction Adviser for Africa</li> <li>• Alessandro De Matteis, Food Aid &amp; Food Security Adviser for Africa</li> <li>• John Rook, Regional Food Security Adviser, Horn of Africa</li> <li>• Dan Maxwell, Deputy Regional Director, East &amp; Central Africa</li> <li>• Rachel Lambert, Rural Livelihoods Adviser</li> <li>• Andrew McCoubrey, Environment Advisor</li> <li>• Feng Min Kan, Senior Regional Officer</li> </ul>
<b>Addis Ababa</b> 30-31 Mar	DFID Ethiopia USAID Oxfam (UK)  Save the Children (UK) UNICEF UN/OCHA Addis Ababa University World Bank Disaster Prevention & Preparedness Commission CARE Ethiopia	<ul style="list-style-type: none"> <li>• Joanna Raisin, Food Security Adviser</li> <li>• Tsegahun Tessema, Chief (Acting) Food and Humanitarian Officer</li> <li>• Niaz Murtaza, Deputy Country Representative</li> <li>• Aregaw Hagos, Regional Food Security Adviser</li> <li>• Kifle Lemma, Humanitarian Programme Coordinator</li> <li>• Beruk Yemane, National Pastoral Programme Coordinator</li> <li>• Melaku Ayalew, Livelihoods Programme Coordinator</li> <li>• John Graham, Programme Director</li> <li>• Alex De Waal, Consultant on HIV/AIDS and food security</li> <li>• Lyle Bastin, Deputy Head of Office</li> <li>• Alula Pankhurst, Department of Sociology</li> <li>• Michelle Phillips, Rural Livelihoods Officer</li> <li>• Mohammed Umar, Head, Policy &amp; Planning Division</li> <li>• Afruika Juvenal, Food Security Deputy Sector Coordinator</li> </ul>





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