Mind the Gap! Post-disaster reconstruction and the transition from humanitarian relief

A report produced for RICS by the Max Lock Centre
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Why does reconstruction after major disasters seem to take so long? What happens to survivors after the humanitarian aid agencies – and the cameras – have moved on? Why does aid money lie 'paralysed' in the accounts of governments and major agencies? Why do so many survivors continue to be stranded in 'transitional' accommodation?

These are among the searching questions posed and answered in this thorough report.

The report provides overwhelming evidence of the existence of a 'gap' – in funding, management and delivery – between short-term, effective humanitarian relief, and long-term reconstruction.

The report also provides hope for the future – an opportunity to rebuild disaster zones and victims' lives, to make things better than before the event: 'reconstruction-plus'. A framework for making that happen will be the goal of the next phase of RICS' 'Gap Project'.

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Foreword

In the aftermath of the Indian Ocean tsunami, chartered surveyors working to rebuild homes in Sri Lanka and Thailand provided valuable feedback to the newly-formed RICS President's Commission on Major Disaster Management. The clear message was that, in the context of such an overwhelming catastrophe, the immediate humanitarian relief work was generally effective and well-funded. But the same could not be said for the medium/long-term recovery and reconstruction.

This apparent lack of management and funding for reconstruction was of great concern, and intensified following the Pakistan-Kashmir earthquake.

How could overwhelmed local governance be expected to cope with the enormous challenge of rebuilding the whole infrastructure of entire communities? How could the humanitarian relief community, devoted to saving life as a rapid reaction force, suddenly be expected to meet the long-term challenges of reconstructing the permanent built environment? This would require a vastly broader range of specialist skills and a funding horizon far beyond their mandate.

RICS, mindful of its Royal Charter commitment to the public interest, and with its global reach, determined to initiate a programme to devise a practical framework for bridging the gap between short-term relief and long-term reconstruction. The proposed framework will be for the use of national and local governments, area governance, NGOs, funding bodies and professionals.

In the first instance, independent verification of the existence and scope of the problem was required. RICS therefore invited the Max Lock Centre at the University of Westminster, well-known for its work in international development and disaster recovery monitoring, and currently coordinating the Tsunami Recovery Network, to examine the problem. Was the issue of uncoordinated, slow and poorly funded reconstruction as serious and widespread as our members' anecdotal reports suggested? Was there evidence of similar issues in earlier disasters? Was the problem limited to colossal disasters? Did this problem only affect the poorest, developing nations, or was it a common problem shared by all?

This report provides clear answers to these questions. The authors have exhaustively examined the data emanating from numerous recent major disasters. The answers provided are concise and fully support the first part of the working hypothesis set by RICS: that the lack of funding and absence of coordinated management of the reconstruction phase following major disasters need to be addressed by the world community.

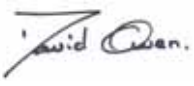
The same working hypothesis goes on to propose: It is feasible to devise a practical framework to remedy these deficiencies.

This becomes the next phase of work for the Commission. Working with a broad group of professionals under the controlling guidance of the University of Salford, RICS is committed to developing a framework to 'Bridge the Gap.'

We commend this report to you, and urge you to contribute your thoughts and experiences, e:gap@rics.org. Only through a collaborative approach can we hope to provide workable solutions to one of the most pressing issues of our age.



Steve Williams FRICS
President, RICS



Dr. David Owen FRICS
Chairman, RICS President's Commission on Major Disaster Management

Mission Statement of the RICS President's Commission on Major Disaster Management:

'To bring the skills and knowledge of RICS members to the assistance of communities, so that those communities may strengthen their capacity to mitigate the effects of major natural and man-made disasters, where these affect the built environment'

Main findings

Why reconstruction following major disasters takes too long and development opportunities are lost

- Despite huge improvements in the emergency response to natural disasters, permanent reconstruction is often inefficiently managed, uncoordinated and slow to get off the ground.
- While recovery is inevitably a complex and time-consuming process, there are strong humanitarian reasons for exploring ways for it to be speeded up.
- Traumatised disaster survivors spend far too long in unsatisfactory transitional accommodation, often unsure whether they will ever have a permanent home and, if so, where.
- Major disasters hit poor communities hardest, both in terms of numbers immediately affected, and through prolonged suffering during reconstruction.
- Disasters and development are inextricably linked, and disaster recovery presents an opportunity to make things better than before: 'reconstruction-plus'. Built environment professionals are needed to make this happen.
- Governments and international agencies are thinking more about how to reduce disaster impacts and link relief with longer-term recovery, reconstruction and development. Global implementation of disaster reduction policies, however, is slow and has been overtaken by the increasing incidence of weather-related natural disasters.
- The funding of recovery from disasters is too inflexible and short term-focused, frustrating efforts to plan and effect a smooth and rapid transition to long-term reconstruction and recovery.
- Local government capacity to plan and implement recovery strategies is usually very limited and often incapacitated as a result of the disaster – local and international NGOs, working with local communities, are needed to supplement government rehabilitation efforts.
- Small NGOs with the professional skills to deliver high quality, low-cost permanent buildings, working with survivors and making use of local materials and labour, are often starved of funds lying 'paralysed' in the accounts of governments and major agencies.
- More effort should be devoted to gathering information from community sources in the immediate aftermath, to complement professional GIS techniques already being effectively deployed, and save on expensive logistical support.
- Establishing and restoring property rights can be a major hurdle to reconstruction, and there is a huge demand for professional support in this field.
- Chartered surveyors, with appropriate training, have key roles to play during all disaster phases, from preparedness to immediate relief, transitional recovery and long-term reconstruction.
- RICS, as an international body, and other built environment professional institutions, should work together to promote the development of a worldwide network of trained professionals, ready to join recovery and reconstruction teams working with local people.
- There is a large and growing body of global policy and good practice on disaster risk reduction and on how the natural hazards that precipitate disasters can be planned for and responded to.
- It should be feasible to devise an effective framework for bridging the gap between short-term relief and long-term recovery, drawing on analysis of system failures and successes seen in past disasters.









Summary

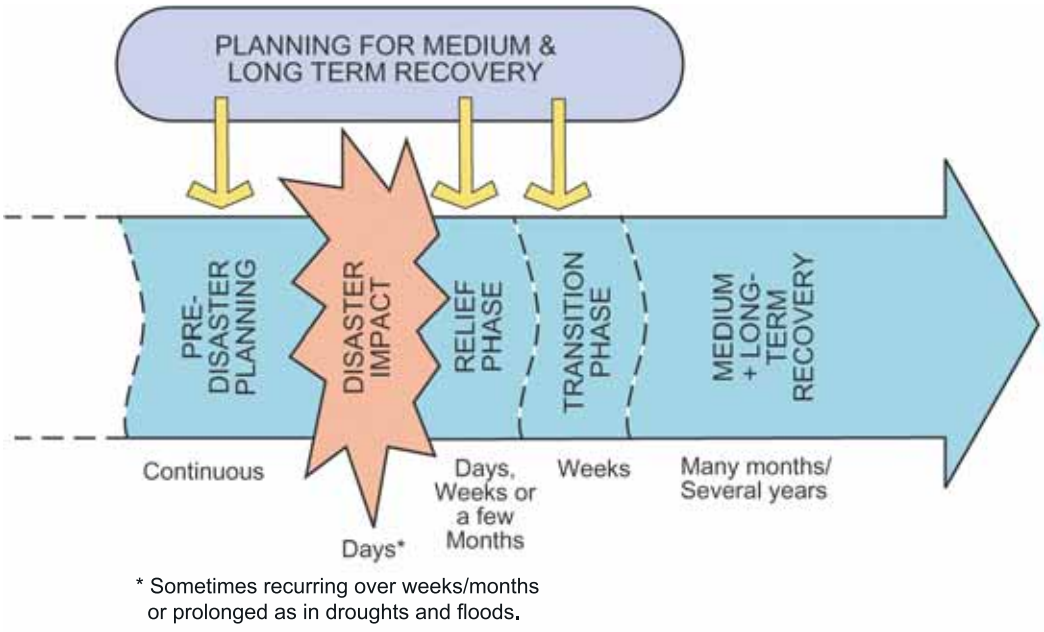
A gap exists between emergency relief and longer-term recovery

This report deals with issues of long-term recovery from natural disasters and the perceived gap between humanitarian relief, and efforts focused on reconstruction and the longer-term rehabilitation of affected households and communities.

It argues that the effectiveness of medium-term recovery and long-term reconstruction is constrained by the lack of planning, co-ordinated management and targeted funding of the response in the post-disaster recovery phase.

Relief effort is focused on meeting the most immediate needs in terms of medical treatment, food, shelter and basic services, and is inadequately concerned with longer-term recovery issues. Humanitarian relief is often very effective, but seldom leads smoothly to rapid, effective and productive medium-term recovery and long-term reconstruction.

Where planning for medium and long-term recovery can occur before and after a natural disaster.



Source: *Max Lock Centre, figure 4 Main Report, after RICS 2006, p1.*

Great strides have been made by the international community over recent decades in managing the emergency response to major natural disasters, with a large and growing body of global knowledge. Much effort went into developing disaster risk reduction policy and institutions during the 1990s (the International Decade for Natural Disaster Reduction) and subsequently, culminating in the recent UN Hyogo Agreement and Framework for Action.

Implementing risk reduction policies, however, presents huge challenges, and requires particular tools and approaches to ensure proper management and resourcing of the reconstruction effort in the wake of disasters that cannot be avoided.

Governments and international agencies are also thinking more about how to link relief with longer-term recovery and reconstruction and development. While lessons are being learned and good practice is gradually being disseminated, the progress of global implementation of disaster reduction policies is slow and has been overtaken by the increasing incidence of weather-related natural disasters.

'While the number of geophysical disasters – earthquakes, tsunamis and volcanic eruptions – has remained steady, the number of hydro-meteorological (weather-related) events – including droughts, windstorms and floods – has more than doubled since 1996. This could be linked to climate change, and scientists predict global warming will result in more extreme weather patterns – stronger and increasingly violent storms. More rain, longer dry spells, more ferocious hurricanes…' (Christian Aid, 2005, p.5).

As that report shows, there are continuing examples of middle-income and high-income countries either not being fully prepared, or failing properly to implement the disaster risk reduction plans that were in place. States that are poorly-developed and starved of investment, infrastructure and professional expertise, or are corruptly or weakly governed, however, are particularly exposed to the impacts of natural hazards.

- 'According to the UNDP, 24 out of 49 low-income developing countries face high levels of disaster risk.…six are hit by two to eight disasters each year. Developing countries experience higher levels of mortality.
- The 6.5 earthquake which hit central California in 2003 took two lives and injured 40 people. By comparison, the 6.6 earthquake, which hit Iran four days later, killed over 40,000 people. Both events took place in areas with high-density populations' (DFID 2005, p.1).
- 'In San Francisco….the last major earthquake caused the death of 62 people. In Turkey, an earthquake of similar magnitude killed 17,000.' (Christian Aid, 2005, p.3).

Additionally, while there are usually preventative measures that can be implemented to mitigate loss of life, it is often not economical to avoid damage to infrastructure and buildings, or to insure entirely against loss of life through disasters.

From both these points of view, the challenges of recovery from disasters arising from natural hazards will be with us for the foreseeable future, and the demands for effective post-disaster responses may in fact be increasing.

- 'Each year of the past decade an average of 258 million people have suffered from disaster – most of them in the developing world, up from 74 million a year in the 1970s..' (Christian Aid 2006, p.7; IFRC, 2002 and 2003).
- 'An average of 354 disasters of natural origin occurred a year in the period 1991 to 1999. From 2000 to 2004 this rose to an average of 728 a year' (IFRC, 2005).
- 'In terms of human loss, in the last two decades, more than one and a half million people have been killed by natural disasters. The total number of people affected each year has doubled over the last decade.' (UNDP, 2004, p.13).

This makes it all the more critical that those dealing with the immediate aftermath of natural disasters ensure that the requirements of medium and long-term recovery are planned for and co-ordinated at an early stage. A framework of good practice that is able to draw on expertise and local resources, where necessary, would ensure that the period of recovery for disaster victims is as short as possible, and that humanitarian relief flows smoothly towards rehabilitation and recovery.

Where property and construction skills can add value to disaster management and recovery

- Assessing disaster-related damage
- Land surveying, GIS and rapid mapping of disaster impacts and risks
- Monitoring funding
- Valuation, cost planning and spending priorities; development finance
- Procurement and project management
- Sourcing construction materials and equipment
- Building quality audits pre- and post-disaster, particularly resistance to disaster risks
- Aiding logistical planning
- Aiding local government land administration, cadastral mapping
- Knowledge of land and property legislation, providing support on land rights and claims
- Knowledge of local regulatory frameworks and ways they could be improved
- Training and knowledge transfer
- Disaster risk assessment
- Links with other built environment professions; inter-disciplinary and team working
- Contacts with local business and industry; networking
- Knowledge of appropriate forms of disaster-resistant construction and engineering.

Max Lock Centre, box 30 Main Report p74.

The causes of the gap

Stable and secure post-disaster recovery is threatened by institutional constraints, gaps in communication, lack of access to inappropriate use of professional skills and knowledge to support local effort, and failures in management and planning.

Opportunities for building on international good practice as a foundation for long-term recovery and development in the early stages of the relief effort are often lost. On top of this, the international organisations involved are often geared towards making an early exit or, for reasons of political pressure, are focused on short-term spending.

Because of the different types of organisation and interest involved, the link between immediate humanitarian relief and the longer-term reconstruction is often poorly managed.

There are institutional cracks between humanitarian-relief focused agencies and those involved with long-term recovery, primarily national and local government. Gaps also exist within agencies, between departments concerned with humanitarian relief and those concerned with reconstruction as part of a development agenda.

'Although it is generally accepted that there is always a link between humanitarian action, recovery and development, and that humanitarian action should establish a framework for recovery, there is currently no consensus concerning the extent to which humanitarian action should support longer-term needs.' (ALNAP, 2006, p.27).

Humanitarian relief is built around an international infrastructure of national, international and inter-governmental organisations (UN, donor agencies, international NGOs) and backed by media interest in the immediate suffering, generating public awareness and private and public response. This is increasingly coordinated through UN agencies working with national bodies (both civil defence and the military).

Long-term recovery, however, is primarily a national, sub-national and local government-led matter. Capacity at local government level to plan and implement recovery strategies is usually very limited and often incapacitated as a result of the disaster. Local and international NGOs are needed to supplement these rehabilitation efforts.

With the estimate of the damage from the Indian Ocean tsunami across all affected countries running at between $10 and $11 billion, at least 80% of the cost of the disaster relates to the longer-term reconstruction and recovery effort (TRN, 2005, Annex 4, p.35).

Why there are funding problems

The funding of recovery from disasters remains overly short-term in its focus, frustrating efforts to plan for a smooth transition from humanitarian relief to long-term recovery.

The concern for accountability is a major, if understandable, constraint on improved early planning and management of the reconstruction process. In addition, it limits the potential for drawing more fully on smaller local organisations that are not in established partnerships with the agencies involved.

The efforts of smaller NGOs, and local grass roots and voluntary bodies, are often excellent, in meeting immediate, local needs, but fall outside of any long term framework for a stable and secure recovery programme, because government and bigger organisations are seldom equipped to encompass this effort.

'Ring-fencing' and a lack of flexibility in the pool of funding prevents it being allocated more appropriately and equitably between the early and later stages of recovery, and transferred between different types of recovery effort, or even between disasters, as the need arises.

'Government and agencies….may spend excessive money on emergency shelter to the detriment of transitional shelter or permanent reconstruction. Often there is inadequate or no finance and human resources left for permanent reconstruction. If there is inadequate planning, transitional shelter can evolve into permanent housing leaving affected people with poor quality housing.' (Provention/ALNAP, 2005a, p.4).

According to the International Federation of Red Cross and Red Crescent Societies (IFRC) World Disaster Report for 2005, there is considerable evidence that the vast sums in public and private donations that poured in following the Indian Ocean tsunami had negative and distorting impacts on the relief and recovery process. Flush with unprecedented funds, many aid agencies wasted money by failing to consult survivors, the United Nations or other relief groups.

Another report, commissioned by the IRFC, evaluating its response during the first few weeks after the tsunami, concluded that the organisation had so much money that it entered areas – like house-building on a massive scale – that were outside its usual mandate and poorly handled. This report concluded that the funds available 'though useful' were 'in large measure in the wrong hands' (Development Today 2006).

'Depending on how you look at it, you can say this has been the best-funded emergency in the world–or the most expensive humanitarian response in history,' UN officer quoted in the IFRC's World Disasters Report 2005.

Recovery is inevitably a complex and time-consuming process. Nevertheless, the recovery period is often unnecessarily prolonged and there are good humanitarian reasons for exploring ways of shortening it.

There is evidence that, despite their commitments, agencies are failing to engage fully with the communities hit by any disaster, or to consider fully the implications of their interventions for local economic and institutional sustainability.

Central planning and co-ordination needs to be backed by mechanisms that allow funds to flow more freely down to the local level, where there is better knowledge of how they can be used to meet the immediate and long-term needs of communities.

There are many gaps that could be bridged by the appropriate use of professional and business skills, but access to these by the local organisations that are on the front line of the recovery effort is highly constrained by institutional factors, a lack of recognition of their existence and capabilities by international agencies, and a lack of targeted funding.

Recovery, risk reduction and development

The report argues that successful planning for disaster relief and recovery is necessarily part and parcel of what should be a larger and permanent disaster management and disaster reduction effort.

This is clearly the case where disaster recovery in areas that are prone to disasters due to natural events, such as earthquakes, volcanic eruptions, mudslides, floods and high intensity storms, must give due regard to incorporating preventative measures to guard against recurrences, or aim to reduce their impacts.

Additionally, disaster management is a development issue, with poorer countries at greater risk and less able to respond to natural disasters, and with recovery offering an opportunity to improve things on the ground.

Linking relief, rehabilitation and development (LRRD) is being seen as an increasingly important element of international development policy, alongside mainstreaming disaster risk reduction. For many reasons, disasters and development are inextricably linked and disaster recovery represents an important opportunity for making things better than they were before – 'reconstruction-plus'.

In developing countries, the capacity to plan for, and implement, disaster relief and recovery, and to implement risk reduction policies, is highly constrained. Of the countries most affected by the tsunami disaster, few (for example, India) had a sufficiently informed, developed and reliable infrastructure of local government to be able to respond through their civic institutions. Many countries have to rely on the military, which is not best placed to understand and respond to the longer-term recovery needs of local communities.

Public awareness of disaster risks, and the existence or absence of a culture of preparedness and risk reduction at the community level is an absolutely critical factor in determining the scale of the impact of natural hazards. Thousands died needlessly when the tsunami struck as a result of ignorance of what it was, as well as the lack of an early warning system and knowledge of how to respond.

As the Fritz Institute found, in its survey of field logisticians participating in the tsunami recovery, 'rescue and early relief efforts are almost always local, preparedness is key' (Fritz Institute, 2005, p.8).

In the longer term, improved governance, policies, planning, management and capacity-building can provide the framework for better access by households and local communities to the professional expertise and knowledge within business, local government and civil society, to reduce their risk to natural disasters, and re-build their properties, villages and neighbourhoods when disasters cannot be avoided.

Where professional expertise is needed

In the foreseeable future, in most low-income developing countries, professional skills and expertise in the built environment will remain a scarce resource, particularly in the more remote regions.

This requires trained surveyors and other built environment professionals to 'think outside the box' and to work with each other, with other professional intermediaries (e.g. the medical profession) and with skilled, non-professional intermediaries, to make the most cost effective use of their existing skills and knowledge.

In addition, new skills are needed to work with the very poor communities who are worst affected by disasters, or with the agencies and intermediaries who are engaged with them. Major disasters hit poor communities hardest, both in terms of numbers immediately affected, and through prolonged suffering during reconstruction.

Among the poor, groups that are particularly vulnerable to the immediate impacts, such as children and old people, are often also the most vulnerable to its aftermath, for example, in relation to their basic human rights and land rights.

There is evidence to suggest that women were the main victims of the Indian Ocean tsunami. An Oxfam International report suggests that 70-80% of those who died in Aceh, Sri Lanka and India were women (Oxfam International 2005, ACHR 2005, p2).

'7,669 schools were destroyed in the earthquake [in northern Pakistan], killing 18,100 students and affecting 790,000 children. So far 500,000 pupils have returned to school, but many are still being taught in makeshift tents and buildings. The charity is providing temporary classrooms for up to 600 schools and 60,000 children in Pakistan over the next two years, but warned that the scale of the problem meant more assistance and funding was urgently needed' (Jessica Aldred, the Guardian 7 April 2006).

Local NGOs and community-based organisations already play a key role in the recovery of poor and disadvantaged groups, but this role could be enhanced, and greater use made of the largely untapped or unmanaged efforts of the disaster victims themselves. More attention needs to be given to restoring and improving local capacity, particularly the professional capacity within local government.

Earlier assessment of the impacts of the disaster and better cost planning and control, with improved mechanisms for monitoring funding flows and expenditure, are ways of greasing the wheels of recovery.

In post disaster conditions communications are often poor and information is a scarce resource, but more widespread and intelligent use could be made of community-led surveys and independent monitoring by local civil society organisations which, with appropriate professional support, could fill the gaps.

Technology has a role to play, but it needs to be used intelligently. New forms of telecommunication and the use of satellites, for example, are increasingly important in helping the recovery effort. The use of remotely-sensed satellite images and GIS is now an essential element of planning and co-ordinating recovery and reconstruction.

Given that recovery funding tends to be front-loaded, short-term, and mostly spent on logistics, the use of helicopters can be excessive and waste resources. More intelligent logistical planning, making better use of local knowledge, could release resources for reconstruction.

Cost planning advice is needed in the management of microfinance, social funds, compensatory and cash transfer payments,

which all have an important role to play in allowing greater choice and ensuring that financial inputs respond to real need. If properly managed, and alongside cash for work programmes, such financial support can ensure the recovery effort does not have a negative impact on local markets and economic institutions, but rather contributes to sustainable economic recovery, income generation and the restoration of livelihoods.

Along with the better use of local human resources, reconstruction should maximize the use of locally-sourced materials, including, in particular, recycling the debris of the disaster. The challenge for reconstruction is to ensure that what is built is better than what it replaces, without sacrificing cultural appropriateness and support for local economic recovery, for the sake of technical efficiency and expediency.

Mass produced housing may be quick to ship in and erect but it is seldom appropriate to need, or sustainable. A flexible approach to rehousing during the transition and reconstruction phases is required, employing local resources wherever possible.

The procurement process has to be carefully managed, to avoid pushing up prices and the exploitation of the situation by unscrupulous contractors and suppliers.

The planning and reconstruction of accommodation for those made homeless is a difficult and complex task, and our research shows that the time required to do it effectively should not be underestimated. The pressures of meeting urgent requirements for temporary, transitional and permanent forms of shelter, produce solutions that are frequently sub-optimal at every stage.

The delay in providing permanent housing for the majority of victims highlights the importance of providing appropriate transitional shelter, for whom 'temporary' can be a very long time. In Sri Lanka, the President celebrated the fact that 50,000 transitional shelters had been put up in six months but, with the start of the monsoon season, many of these temporary homes were already in need of upgrading (Oxfam International, 2005, p.5).

At a time when they are at their most vulnerable, and often suffering from post-disaster trauma, people are housed in unsatisfactory transitional accommodation, often with complete uncertainty as to whether and, if so, where, they will finally be permanently accommodated. Sometimes, as currently in Pakistan, there is pressure for them to leave 'tent cities' without a proper plan for their permanent re-accommodation.

The current approach to building shelter lacks flexibility, and does not allow for proper consultation and community participation. It fails to recognise that 'temporary' can be a very long time, and often ignores the needs and cultural mores of particular groups.

Often, people prefer to remain close to the ruins of the old home, for fear of losing their property to land grabs by speculators, government appropriation or exclusion through new planning regulations, or occupation by other refugees. Where they are scattered, this can make catering for their immediate needs and planning for the long-term rehabilitation more difficult.

Establishing and restoring property rights can be a major hurdle to locally appropriate reconstruction, and there is a huge demand for professional support in this area.

Key factors in ensuring that the development opportunities of disasters are fulfilled include:

- Adherence to agreed international standards such as the Sphere standards*;
- Greater involvement of communities in deciding, planning and building their own future and assessing, managing and monitoring their assets; and
- More intelligent and strategic use of professional and technical support at the local level.

Within and beyond the recovery effort, there is a huge demand for building the capacity of local government and civil society to plan for, and mitigate the risks of, natural disasters in vulnerable zones. It will be necessary to get the building codes and planning regulations governing the design, location and layout of buildings and settlements both right and enforced.

* Sphere standards are the international project standards guiding humanitarian response to disasters: see Appendix 4.

The role of built environment professionals and the need for inter-disciplinary collaboration

Within all of this, and at every stage, the built environment professions have invaluable expertise and a key role to play. Working in multi-disciplinary teams and with local partners and intermediaries is essential. This kind of activity requires a special and new set of professional skills that need to be shared across all the built environment professions.

Recovery, above all, is a collaborative effort in which skills and resources have to be used and adapted, as and where required. Working with communities, particularly those that are traumatised by the disaster and the personal impacts on their lives, needs special skills and care.

Chartered surveyors, in particular, offer a wide range of relevant skills and technical expertise, but the conditions of operating in post-disaster situations, particularly in poor countries, require them to be flexible and imaginative in their attitude and approach.

The table overleaf sets out the areas where intervention by property and other construction professionals can lend support to the disaster management process and help overcome the gap between relief and recovery.

RICS, as an international body, and other professional institutes at local, regional, national and international level should have up to date inventories of their members' skills, qualifications, experience, location and availability to join teamwork on disaster recovery that is community-based and appropriate.

Surveyors in particular should be able to offer sound advice to communities and external relief agencies on local customs and practice in land tenure, valuation, compensation and any necessary re-locations. Respect and understanding of these are building blocks for sustainable, long-term reconstruction.

At the same time, considerable scope exists for increasing multi-disciplinary working practices between the relevant professions involved in disaster prevention, mitigation and recovery, to reflect the fact that the processes involved are multi-dimensional.

From relief to reconstruction: the added value of inputs from property and construction professionals.

Activities			Key actors/clients:
Phase 1: Relief	Plan recovery effort and logistical planning		UN/IFIs/Government/relief agencies/military/civil defence
	Initial estimation of damage and needs assessment of survivors		UN/IFIs/relief agencies/military/ civil defence
	Rapid mapping of affected areas using remote sensing & GIS		Relief agencies/military/civil defence
	Establish information centres		Communities/local NGOs/UN
	Procure and supply emergency shelter		Relief agencies/military/civil defence//private contractors
Phases 2: Transition	Support community surveys and mapping exercises		Communities/local NGOs
	Housing needs assessment and establish baseline and eligibility		UN/IFIs/Government/relief agencies Communities/local NGOs
	Plan and construct transitional shelter/repair lightly damaged property; project planning and contract management		Households/communities/property owners/local NGOs/relief agencies/Government
	Phase 3: Reconstruction period	Re-establish damaged major infrastructure (road, water, sanitation)	Relief agencies/military/ civil defence/private contractors
		Assist in establishing property rights and claims and moderate conflicts	Households/communities/ property owners/local governments/ local NGOs/relief agencies
		Assistance and assessment of compensation claims	Households/Government/ local NGOs/consultants/ insurance companies
		Identify, survey and procure safe land for new housing	Households/communities/ property owners/local governments/ local NGOs/relief agencies
		Advise on land boundary issues/surveys for cadastral proposes	Local government/ Government/property owners
		Advise on new and revised building codes/ land planning regulations	Local government/Government
		Detailed assessment of damage to housing; project planning	Households/communities/ property owners/local governments/ local NGOs/relief agencies
		Source and procure essential building materials/skilled labour	Relief agencies/military/ civil defence/private contractors/communities/local NGOs
		Provide expertise for safe, rapid, sustainable and appropriate building construction	Households/communities/property owners/local governments/local NGOs/relief agencies/Government
		Conduct training on safe/sustainable construction methods	Households/communities/ property owners/local governments/ local NGOs/relief agencies/ Government
		Financial planning and management; development finance advice; project management	Government/local government/ relief agencies/communities/ local NGOs/contractors
		Plan and rebuild damaged and destroyed homes	Relief agencies/contractors/communities/ Government/local NGOs

Source: *Max Lock Centre, Table 3 Main Report.*

Mind the Gap!

Introduction: report aims and methodology

This report is concerned with issues of long-term recovery from natural disasters and the perceived gap between humanitarian relief, and efforts focused on reconstruction and the longer-term rehabilitation of affected households and communities. The arguments that it makes could apply in part or whole to all disasters with a major impact on lives and property. However, the particular focus of the report is on recovery from natural disasters, and draws heavily on the experience of the headline disasters of the past eighteen months that have been monitored by the authors, as part of the Tsunami Recovery Network.

It argues that the perceived gap is also a real one and that effectiveness of the medium and long-term recovery process after disasters caused by natural hazards, particularly in the area of physical reconstruction, is constrained by the lack of planning, co-ordinated management and targeted funding of the response in the immediate and transitional post-disaster recovery phases. This response remains focused on urgent humanitarian relief and is inadequately concerned with longer-term recovery issues. Humanitarian relief is often very effective but less frequently leads smoothly to rapid, effective and productive medium-term recovery and long-term reconstruction.

The report aims to explore and present the evidence for the existence of this gap and the reasons behind it. It does so within the larger context of a major effort by the international community over several decades to mainstream disaster preparedness and risk reduction as a central element of national planning and sustainable development policy.

It is based on a review of a large number of recently published reports concerned with the impacts and mitigation of natural disasters in general, and recent disasters in particular. Evidence is drawn from a range of secondary sources (published reports by agencies and advocacy organisations; media reports; and technical literature). The report also draws extensively on the continuous monitoring of the coverage of the recent Indian Ocean tsunami and South Asia earthquake disasters undertaken by the Tsunami Recovery Network since its inception in January 2005.

It is clear that considerable progress has been made in efforts to co-ordinate international relief efforts where disasters occur. There are also examples of good practice of disaster planning, risk reduction and preparedness, with notable progress made in some relatively low-income countries in reducing the loss of life due to major natural hazards, sometimes dramatically so. A huge global effort has gone into building knowledge bases, and documenting and disseminating good practice in disaster management.

Nevertheless, the past eighteen months has seen a loss of life and economic damage on an enormous scale as a result of two major disasters, the Indonesia earthquake and tsunami that struck many countries across the Indian Ocean in December 2004 and the earthquake that affected northern Pakistan and Kashmir in October 2005, and many other smaller disasters. As we complete this report news is coming in of another earthquake in Indonesia, this time striking near the historic city of Yogyakarta and claiming thousands more lives.

Table 1 Recent major climate-related disasters

Date	Country	Disaster type	Victims and damages
February 2006	Philippines	Landslide	1,112 killed, 19 injured 3,272 affected US$2,203,000 damage
October 2005	Guatemala	Wind Storm: Hurricane Stan	1,513 killed, 386 injured 474,928 affected US$988,300,000 damage
August/Sept 2005	United States	Wind Storm: Hurricane Katrina	1,322 killed 500,000 affected US$125,000,000,000 damage
July/August 2005	India	Flood	1,200 killed, 55 injured 20,000,000 affected US$3,330,000,000 damage
July 2005	Cuba	Wind Storm: Hurricane Dennis	16 killed 2,500,000 affected US$1,400,000,000 damage
July 2005	Bangladesh	Flood	23 killed 1,000,000 affected
July 2005	Niger	Drought	3,600,000 affected
February 2005	Pakistan	Flood	520 killed, 450 injured 7,000,000 affected
January/Dec 2005	Kenya	Drought	27 killed 3,500,000 affected
November 2004	Philippines	Wind Storm: Tropical storm Winnie	1,619 killed, 1,023 injured 880,000 affected US$78,200,000 damage
June/August 2004	Bangladesh, India	Flood, Flash Flood	1,630 killed 69,000,000 affected US$2,420,000,000 damage
June/July 2004	Kenya	Drought	2,300,000 affected
January 2004	South Africa	Drought	4,000,000 affected

Source: *EM-DAT, CRED, University of Louvain, Belgium. Emergency Disasters Data Base website.* http://www.em-dat.net/disasters/list/php *[Accessed 05 May 2006]*

Table 2 Recent major geophysical disasters

Date	Country	Disaster type	Victims and damages
October 2005	Pakistan	Earthquake	73,338 killed, 69,142 injured 2,800,000 homeless US$5,000,000,000 damage
December 2004	Indonesia, Sri Lanka, India, Thailand, Maldives, other countries	Wave/Surge Tsunami Earthquake	223,492 killed 400,000 homeless US$10,000,000,000 damage
February 2005	Iran	Earthquake	612 killed, 1,411 injured 93,355 affected US$80,000,000 damage
February 2004	Morocco	Earthquake	628 killed, 926 injured 12,539 homeless US$400,000,000 damage
December 2003	Iran	Earthquake	26,796 killed, 22,628 injured 45,000 homeless 200,000 affected US$1,000,000,000 damage

Source: *EM-DAT, CRED, University of Louvain, Belgium.*
Emergency Disasters Data Base website. http://www.em-dat.net/disasters/list/php

In this document we highlight how the impacts of these events, in terms of loss of life and livelihoods, and damage to infrastructure and housing, and subsequent displacement of millions of people were magnified by a lack of preparedness.

At the same time, while the national and international efforts in meeting the immediate needs of humanitarian relief were effective, there is evidence to show that the efforts to deal with the longer term impacts of these disasters has been notably less successful.

While lessons are being learned and good practice is gradually being disseminated, the progress of global implementation of disaster reduction policies is slow in general and has been overtaken by the increasing incidence of (in particular) weather-related natural disasters. States that are poorly-developed and starved of investment, infrastructure and professional expertise, or are corruptly or weakly governed are particularly exposed to the impacts of natural hazards, but there are also examples of middle-income and high-income countries either not being fully prepared or failing to properly implement the disaster risk reduction plans that were in place.

Additionally, while there are usually preventative measures that can be implemented to mitigate loss of life, it is often not economical to avoid damage to infrastructure and buildings, or to insure entirely against loss of life through disasters.

From both these points of view, the challenges of recovery from disasters arising from natural hazards will be with us for the foreseeable future, and the demands for effective post-disaster responses, may in fact be increasing.

This makes it all the more critical those involved in dealing with the immediate aftermath of natural disasters ensure that the requirements of medium and long-term recovery are planned for and co-ordinated at an early stage. Together with a framework of good practice that is able to draw both in and on the necessary expertise and local resources when and where necessary, it will ensure that the period of recovery for the disaster victims is no longer than it needs be, and that humanitarian relief flows smoothly towards rehabilitation and recovery.

The Kobe Earthquake 1995

Box 1

The Great Hanshin earthquake occurred at 5:46 a.m. on Tuesday, January 17, 1995. This earthquake is also called by the following names: Kobe, South Hyogo, Hyogo-ken Nanbu. The earthquake had a local magnitude of 7.2. The duration was about 20 seconds. The focus of the earthquake was less than 20 km below Awaji-shima, an island in the Japan Inland Sea. This island is near the city of Kobe, which is a port city.

The earthquake was particularly devastating because it had a shallow focus. The earthquake had a 'strike-slip mechanism.' The resulting surface rupture had an average horizontal displacement of about 1.5 meters on the Nojima fault. This fault runs along the northwest shore of Awaji Island. The earthquake caused 5,100 deaths, mainly in Kobe. The Hanshin earthquake was the worst earthquake in Japan since the 1923 Tokyo earthquake, which is also called the Great Kanto earthquake. The Great Kanto earthquake claimed 140,000 lives. On the other hand, the Kobe region was thought to be fairly safe in terms of seismic activity.

… Most of the deaths and injuries occurred when older wood-frame houses with heavy clay tile roofs collapsed. Note that homes and buildings are designed to be very strong in the vertical direction because they must support their own static weight. On the other hand, buildings can be very susceptible to horizontal ground motion. Furthermore, many of the structures in Kobe built since 1981 had been designed to strict seismic codes. Most of these buildings withstood the earthquake. In particular, newly built ductile-frame high rise buildings were generally undamaged. Unfortunately, many of the buildings in Kobe had been built before the development of strict seismic codes.

The collapse of buildings was followed by the ignition of over 300 fires within minutes of the earthquake. The fires were caused by ruptured gas lines. Response to the fires was hindered by the failure of the water supply system and the disruption of the traffic system.

Japanese seismology professor Tsuneo Katayama wrote that he 'had opportunities to observe the damages caused by the 1989 Loma Prieta and the 1994 Northridge earthquakes.' However, he thought that Japanese structures would not collapse as U.S. structures had in those earthquakes.

Professor Katayama also wrote, 'While our country was having a bubbling economy, we Japanese forgot to pay due attention to mothernature.'

http://www.vibrationdata.com/earthquakes/kobe.htm

Background, definitions and conceptual framework

Natural hazards, disasters and human settlements: causes, risks and exposure

Disaster definition Box 2

Disaster: A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources.

http://www.unisdr.org/eng/library/ lib-terminology.htm

Current thinking has it that there are no 'natural' disasters. Hazards (both man-made and with natural origins) give rise to disasters when they coincide with vulnerable populations or infrastructure and hence all disasters, to some degree, are man-made.

The term natural disaster is commonly used and we employ it in this report on the understanding that it refers to disasters that arise out of the conjunction of man-made conditions with natural hazards resulting from weather-related or geophysical events. The intensity or frequency of such events can be heavily influenced by human activity such as human-influenced global warming affecting the pattern of droughts, storms and floods, or deforestation, resulting from agricultural activity, forestry or urbanization increasing the likelihood of land or mudslides (DFID, 2005, p.2).

Taking the naturalness out of natural disasters Box 3

When does nature become a disaster?

'More than 100,000 people died last year in 650 natural disasters that cost the world's economies an estimated $210bn. How natural were these disasters?'

'Thirty years ago this month, a trio of scholars, Ben Wisner, Ken Westgate and Phil O'Keefe, published a paper in Nature, called "Taking the naturalness out of natural disasters". It laid the groundwork for something now widely agreed: that nature makes volcanic eruptions, earthquakes, landslides, floods and windstorms, but humans are responsible for the deaths. And the humans most likely to die are the poor and the outcast.'

Radford, T., 2006, 'Disastrous results' The Guardian 28 April 2006.

In the case of the tsunami disaster of 2005, the removal of natural protection against its impacts such as mangrove forests through human activity worsened the impact. Coral reefs protected towns from waves. Illegal coral mining off the southwest coast of Sri Lanka allowed far more onshore destruction from the December 26, 2004, tsunami than occurred in nearby areas whose coral reefs are intact. This was the principal finding of researchers from the United States and Sri Lanka who studied the area early in 2005 funded by the BBC, the Earthquake Engineering Research Institute, the US National Science Foundation and the US Geological Survey. (http//:usinfo.state.gov; http//:www.reliefweb.int/)

Coastal management and disaster risk

Box 4

'As the clear-up from the Asian tsunami starts and the full damage is assessed, there is growing consensus among scientists, environmentalists and Asian fishing communities that the impact was considerably worsened by tourist, shrimp farm and other industrial developments which have destroyed mangrove forests and other natural sea defences….

'Many studies have found that mangroves protect coastlines from erosion, storm damage and wave action by acting as buffers and catching alluvial materials. They also protect coral reef and sea grass beds from damaging siltation and pollution.

'But, says the US-based Mangrove Action Project (Map), a network of 400 NGO and more than 250 scientists and academics working in 60 countries – mangrove forests may be disappearing faster than rainforests…. According to Map, mangroves once covered 75% of the coastlines of tropical and subtropical countries. Today less than 50% remain, and of this remaining forest, more than half is degraded….'

According to MAP loss of wetlands increased the vulnerability of Louisiana's coastline to the recent Hurricane Katrina. 'Healthy marshes and barrier islands act as storm buffers. For thousands of years, sediment from the Mississippi River replenished Louisiana's coastal wetlands. Since 1930, however, more than a million acres of wetlands have disappeared throughout the Mississippi River Delta, where so much of Hurricane Katrina's wrath was felt.'

Vidal, J., 2005. The Guardian, 6 January 2005. http://www.earthisland.org/map/

About two thirds of disasters are caused by climatic hazards. There is growing evidence of the links between climate change and disaster risk. Global warming is expected to increase levels of variability and extreme events (DFID, 2006, p.7)

While the number of geophysical disasters – earthquakes, tsunamis and volcanic eruptions – has remained steady, the number of hydro-meteorological (weather-related) events – including droughts, windstorms and floods – has more than doubled since 1996. This could be linked to climate change, and scientists predict global warming will result in more extreme weather patterns – stronger and increasingly violent storms. More rain, longer dry spells, more ferocious hurricanes (Christian Aid, 2005, p.5)

Urbanisation, the increasing proportion of people living in towns and cities, increases the exposure of populations living in disaster risk-associated areas and the associated cost of restoring infrastructure and buildings in the case of disaster striking. Higher population densities and more complex infrastructure will result in greater potential for large-scale impacts, particularly as urban populations often have a poor understanding of their vulnerability' (DFID, 2006, p.7).

While the growing number of large and mega cities is often highlighted, much of the population growth is concentrated in smaller urban settlements, where the capacity to deal with the aftermath of a disaster in terms of specialised emergency medical and other professional services, is likely to be much more limited.

Clearly, when disasters strike large cities as with the earthquake in Kobe in 1995 or Hurricane Katrina in New Orleans last year, the impacts in terms of damage or loss of life are magnified. On the other hand, the more remote and scattered the population, as with the recent earthquake in North Pakistan and Kashmir, the further they are likely to be from help and the more difficult it is to reach them when disaster strikes. Relief and recovery are hindered and the disaster impacts that result from a delay in reaching victims heightened as a result. In remote and rural regions, therefore, urban and infrastructure development may also be mitigating factors in they can provide better access to services that can aid in the relief and recovery process and, if properly employed, in ensuring greater disaster preparedness.

Developing countries in the firing line

Box 5

'More than half of disaster deaths occur in low human development countries, even though only 11% of people exposed to hazards live there. These countries suffer far greater losses relative to their GDP than richer countries.'

'According to the UNDP, 24 out of 49 low-income developing countries face high levels of disaster risk…six are hit by two to eight disasters each year. Developing countries experience higher levels of mortality. The 6.5 earthquake, which hit central California in 2003, took two lives and injured 40 people. By comparison, the 6.6 earthquake, which hit Iran 4 days later, killed over 40,000 people. Both events took place in areas with high-density populations.'

'The IMF estimates that the average economic cost for each individual large-scale natural disaster event was over 5% of GDP in low-income countries between 1997 and 2001'

Disaster risk reduction: a development concern, DFID, 2005, p.1.
Reducing the Risk of Disasters – A DFID policy paper, DFID, 2006, pp.6 & 8.

Poorer countries are of course weaker in terms of their capacity to respond to disasters, both in terms of human resources and in lack of infrastructure, and more likely to suffer from problems of poor governance and corruption, further constraining the ability to respond. Poverty can be much the most important factor in determining vulnerability to disasters and their impacts in terms of loss of life, injury and damage to property.

Nevertheless, the relationship between vulnerability to disasters and level of GDP in high exposure countries is not straightforward. Levels of corruption and governmental competence vary from country to country at similar levels of economic development. 'Violence and armed conflict, governance and social capital are also important factors of risk' (UNDP, 2004, p.6). Better-governed developing countries have higher levels of human development and are better prepared for disasters and able to deal with their aftermath. A focus on education and raising awareness of the risks associated with natural hazards and how these may be mitigated among the population at the local level can achieve results with effective use of limited resources.

Weathering the storms in Cuba

Box 6

Cuba's geographical location gives it a high and recurrent risk of hurricanes. In the seven years between 1996 and 2002, six major hurricanes have hit Cuba, yet a total of only 16 people have died. The same hurricanes claimed the lives of 665 people elsewhere. When Hurricane Isabel hit the mid-Atlantic United States, it alone was responsible for 22 deaths and indirectly responsible for 6 deaths. These six hurricanes destroyed nearly 20,000 homes and damaged another 206,000. An average of nearly 400,000 was evacuated on each occasion. (pp.6-9).

Cuba is a small and poor country that makes the best use of its social assets at the national and local level. 'Disaster mitigation, preparedness, response and recovery measures are enshrined in laws that are enforced'. (p.22). Physical planning and land use regulation laws are firmly embedded in governmental structures. National policies are directed towards preventing overpopulation of high-risk areas. 'Cuba's National Civil Defence is unique in its combination of national structure and grassroots organisations … and is again enshrined in law … to mobilize the entire population in case of national threats and disasters …' (p.29). It is also unique in building on the existing provincial and municipal leadership and administrative structures and responds to a well-planned early warning system. (p.30).

Above all, it has a strong focus on community mobilization. The Cuban population is educated in disaster preparedness through the media, the Cuban Red Cross and formal education in school as part of an effort to create a culture of safety. In addition there are three educational exercises in which a significant number of the population participate: community risk mapping, annual updating of the emergency plan and a national simulation exercise. (p.31).

'Cuba's success can be credited to its government, but also to its governance, especially its focus on community mobilization around preparedness. Cuba's efforts, especially in the highly replicable area of community preparedness, clearly have implications for a wide range of countries and natural disasters'. (p.8).

In 2003 Cuba ranked 116th in terms of GDP per capita at Purchasing Power Parity but 52nd in the world in terms of its Human Development Index.

Oxfam America, 2004. UNDP, 2005c.

The economic and human impact of natural disasters

Global resources for measuring and mapping the impacts and risks associated with natural disasters are growing in scope and sophistication (see box 7) and a number of indicators are commonly used to put these in context. For example, three quarters of the world's population live in areas that were affected at least once by an earthquake, a tropical cyclone, flooding or drought between 1980 and 2000 (UN Bureau for Crisis Prevention and Recovery, quoted in Christian Aid, 2005, p.5).

One important indicator of the impact of disasters is the economic losses that result. These are usually reported with respect to direct losses from damage to infrastructure and assets and seldom take into account the knock-on economic effects (UNDP, 2004, p.13). 'Munich Re estimates that global economic losses for the most recent ten years (1992-2002) were 7.3 times greater (in real terms) that the 1960s. The World Disaster Report 2002 assesses the annual average estimated damage due to natural disasters at US$69 billion.' (UNDP, 2004, p.13, Munich Re, IFRC, 2002). Asia shows the highest reported losses but those in Europe and the Americas are considerably greater than those in Africa. This reflects more the value of infrastructure and assets at risk than the community development impact, which is considerably higher in poor countries with minimal infrastructure and assets.

Another indicator is the number of people affected. In a recent report highlighting the impact of climate change on the poorest people of the world, Christian Aid, quoting from the World disaster report, noted that each year of the past decade an average of 258 million people have suffered from disaster – most of them in the developing world, up from 74 million per year in the 1970s (Christian Aid 2006; IFRC, 2002 and 2003). Thus, as the pace and intensity of climate-related disasters increases, the poor are hit even harder.

Availability of information on disasters: Munich Reinsurance — Box 7

The NatCat service is a highly regarded database that is maintained by the Research and Development Department of Munich Reinsurance (Munich Re), in Munich, Germany. It provides information about major and technological natural catastrophes that have occurred around the world since 1965, although neither the social nor economic consequences of droughts are currently included in its records.

The Munich Re World Map of Natural Hazards has been a valuable source of information for risk management professionals since it was first published in 1978. The Globe of Natural Hazards, most recently updated in 1998, has also proved to be an effective information tool. Munich Re regularly produces additional publications and has issued a CD-ROM, World of Natural Disasters, to advance public knowledge of hazards. By using digital technology and GIS, this CD-ROM provides basic risk identification and evaluation expertise to engineers, government officials and other interested parties. It can be used to identify quickly the predominant natural hazards and related risks at any terrestrial position in the world at the click of a button. The CD-ROM also contains comprehensive profiles and basic risk related reference information about more than 200 states and territories.

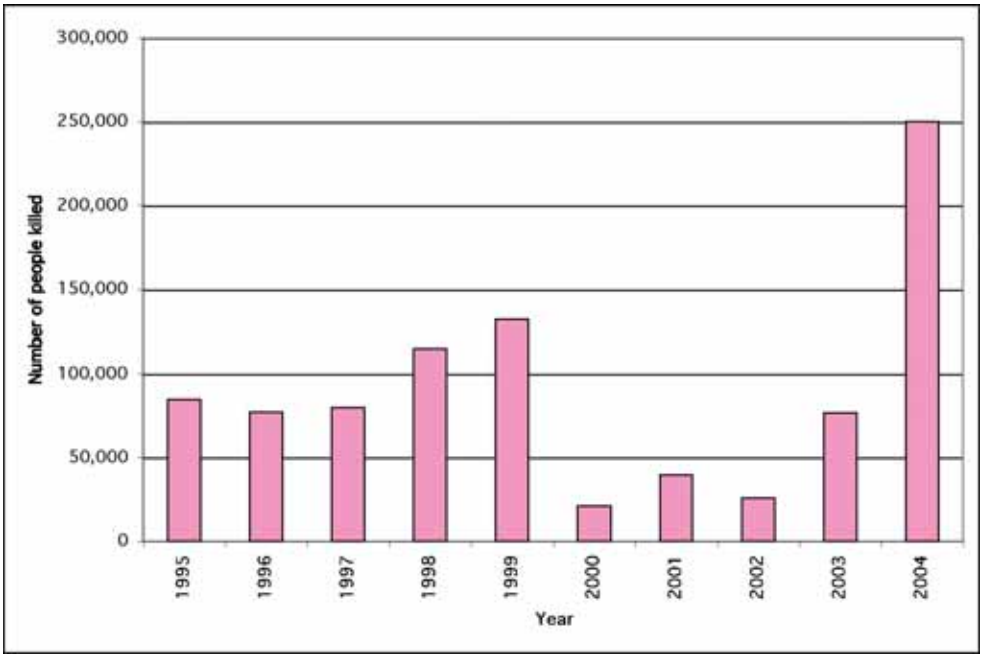
http://www.munichre.com.htm

According the World Disasters Report 2005 (IFRC, 2005), the number of reported disasters has increased steadily over the past century and risen very sharply during the past decade. An average of 354 disasters of natural origin occurred per year in the period 1991 to 1999. From 2000 to 2004 this rose to an average of 728 per year.

'In terms of human loss, in the last two decades, more than one and a half million people have been killed by natural disasters. The total number of people affected each year has doubled over the last decade.' (UNDP, 2004, p.13) 'Worldwide, for every person killed, around 3,000 people are exposed to natural hazards.'

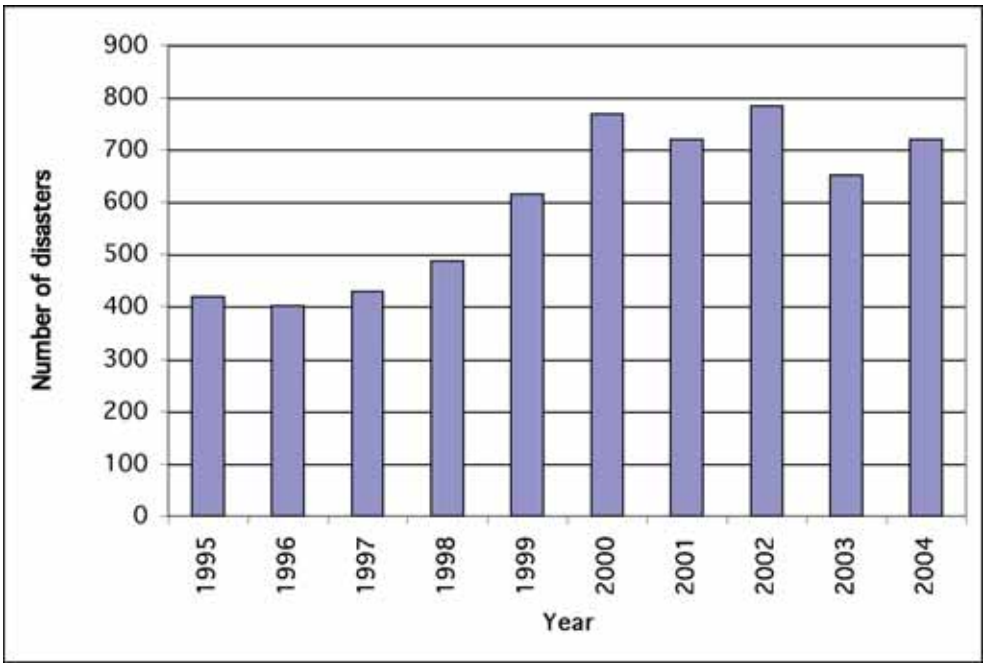
According to the UNDP, the Asia-Pacific region has experienced the greatest loss of life both in absolute terms and in proportion to the population, due to earthquakes, floods and tropical cyclones (UNDP, 2004, p.14). The regional mortality from drought is greater in Africa than Asia and the Pacific, and is often part of a larger human impact that includes armed conflict, disease and poverty. Regional impacts in Latin America are mostly related to tropical cyclones (which also have a major impact in Africa and North America) and flooding (which also has a major impact across all other regions, in particular Africa, West Asia and Europe). Similarly, whilst having the greatest impact in terms of loss of life in Asia and the Pacific, earthquakes claimed significant numbers of lives across all regions during the 1990s, in particular Europe, Africa and Latin America and the Caribbean.

Figure 1 Total numbers reported killed in natural disasters 1995-2004



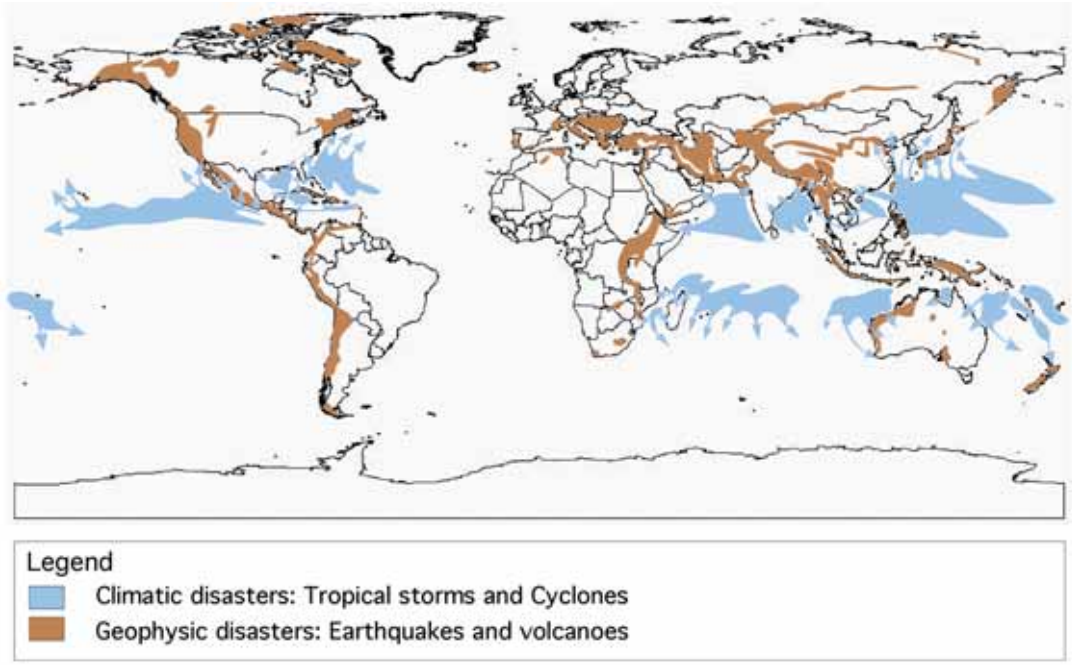
Source: *Christian Aid, 2005, p.4; EM-DAT, CRED, University of Louvain, Belgium.*

Figure 2 Total reported number of disasters 1995-2004



Source: *Christian Aid, 2005, p.4; EM-DAT, CRED, University of Louvain, Belgium.*

Figure 3 World map of natural hazards



Source: *Max Lock Centre based on ISRD, 2004, p.38, Munich Re, 1998 and A World Bank 2005.*

Conceptual framework for disaster management

The terminology of disaster relief and recovery, rehabilitation and reconstruction is used without precise and commonly agreed definitions. In practice, distinction is drawn between the emergency relief phase and the subsequent non-emergency recovery. However, commonly three phases of response and recovery are identified:

1 Emergency or humanitarian relief/early recovery phase – the immediate post recovery, which can last days, weeks or months depending on the nature of the disaster and local conditions.

2 Transitional phase – with the recovery of social institutions, the economy and the main infrastructure, transition to the longer-term recovery and reconstruction process can be implemented. If effective planning for longer-term recovery is a part of the early recovery, then the transition should be short, smooth and imperceptible.

3 Reconstruction, medium-term and long-term recovery – normally anything from six months to many years.

In addition, there is a larger dimension of disaster planning and preparedness, which may or may not exist in any particular location, and which can have a huge influence of the scale and impact of the disaster that results from a hazardous natural event (or indeed whether or not a disaster actually occurs).

Within a disaster-hit region, there will additionally be variations in the scale of damage and human suffering and in the capacity to manage different aspects of relief, recovery and reconstruction. This means that the different stages may be achieved within different timescales in different districts. This suggests that it is all the more important to try to plan for a smooth transition between relief and long-term rehabilitation and recovery at the earliest possible opportunity, preferably as part of the disaster preparedness phase. In this way, communities and settlements that are already able to deal with their longer-term reconstruction needs are not held back by the management of extended relief efforts elsewhere.

In practice, however, with attention focused on the massive and pressing humanitarian relief operations and restoration of the basic social, economic and physical infrastructure following a major disaster, planning for medium and long-term recovery can take a back seat, or only be considered on a fragmented agency by agency basis by organisations involved in relief and recovery.

National disaster plans are often not in place and, even where they are, they are less than perfect or not properly implemented because of poor governance and management and/or lack of capacity (see box 8).

In the absence of a well-planned and managed national response to natural disasters, planning has to be done once the disaster has occurred. Early planning should be comprehensive and address the three phases of relief, medium and long-term recovery and the transition between them. Early attention should be given to the medium-term recovery and long-term reconstruction.

In practice, this often proves difficult, if not impossible, as it takes time to assess the scale and impact of the natural disaster and the resources available to respond to it are uncertain. As in the case of the tsunami disaster, aid can made available fairly quickly on a large-scale but uncoordinated basis and this adds to the confusion in the immediate aftermath of the disaster.

Lessons of Hurricane Katrina Box 8

US Senate panel urges replacing disaster agency

'The Aug. 29 storm killed about 1,300 people, displaced hundreds of thousands and shattered New Orleans and the Mississippi Gulf Coast. Many people throughout Louisiana and Mississippi are still without permanent homes and much of the region's infrastructure is crippled. Government investigations of the Katrina response have pointed to poor lines of communication among federal agencies. There has been considerable debate in Washington about whether FEMA should remain part of Homeland Security, which was created after the Sept. 11 attacks, or become a separate agency. The committee's recommendations went into great organizational detail, calling for more regional offices than the 10 FEMA now has, the consolidation of three interagency coordinating groups into one and greater funding for preparedness at the state and federal levels. "Preparation for domestic events must be done as robustly as that for foreign threats," the report said.'

No shelters of last resort in New Orleans storm plan

'New Orleans' Superdome and convention center, where scenes of despair, anger and death shocked the world after Hurricane Katrina, will not be shelters of last resort in Mayor Ray Nagin's new storm evacuation plan. Instead, buses and trains will rush the disabled and elderly out of the battered city as officials start to empty it 30 hours before a strong hurricane makes landfall, Nagin said on Tuesday as he announced the long-awaited strategy.

… Nagin was widely criticized for waiting too long before ordering evacuation ahead of Hurricane Katrina, which made landfall as a Category 3 storm and killed 1,300 people along the Gulf Coast. Poor, disabled and elderly people were left with no means to leave.

As levees failed and 80 percent of the city flooded, thousands of residents made their way to the Louisiana Superdome and Ernest N. Morial Convention Center, which had no power or working plumbing and little security. Television beamed scenes of hunger, thirst, illness and even death to the world, as days passed with no rescue.

… Nagin could not say if the plan would be in force by the June 1 start of the hurricane season if he loses the May 20 runoff election. But he noted a new mayor 'would have to be Einstein' to quickly cobble together a different strategy.'

Reuters 27 Apr 2006. http://www.alertnet.org/thenews/newsdesk.htm
Jeffrey Jones, Reuters 02 May 2006. http://www.alertnet.org/thenews/newsdesk.htm
summarised MLC.

After an earthquake, the first needs-assessment, infrastructure and macro economy-focused, and led by the government and multilaterals such as the World Bank, Asian Development Bank or UNDP, usually takes place four weeks after the event (ProVention/ALNAP 2005b, p.9). Multi-disciplinary team exercises to assess the damage to communities on the ground take much longer.

The immediate focus on humanitarian relief means that insufficient attention is given to planning the overall relief and recovery effort to meet the longer-term recovery needs. Furthermore, externally-driven rebuilding often takes place without proper consultation or assessments of social, economic or cultural sensitivities or circumstances.

Individual organisations such as international agencies and NGOs involved in humanitarian relief are able to plan and manage their own efforts to provide disaster relief and sometimes to contribute to the long-term recovery effort on an individual and generic geographical and political basis. However, they are unlikely to have in place country or area-specific disaster plans so their contribution can only be specialised and partial.

More often than not, relief and recovery operations overlap, as different groups need different kinds of support. It is thus imperative that the phasing and delivery of support should respond to local need rather than the timetable of outside agencies (ProVention/ALNAP 2005a, p.2).

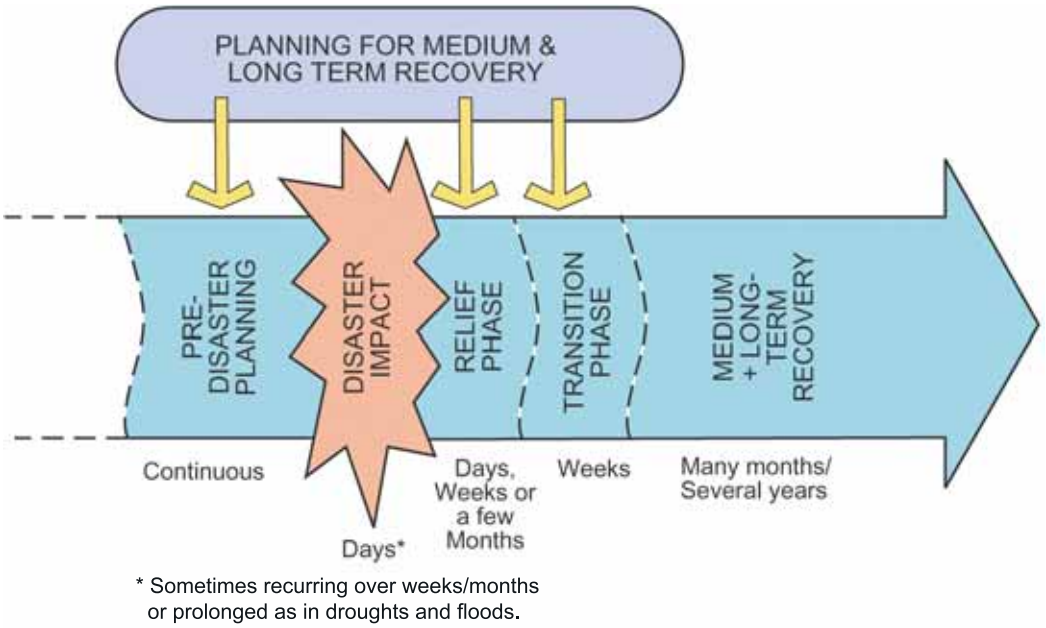
Co-ordinated planning for long-term recovery if at all, then, usually only comes together during the transition phase, once the institutional and physical infrastructure is in place, with an inevitable prolongation of the process.

The model of phasing of disaster planning, relief, transition and recovery, together with the related possible entry points in terms of planning for medium and long-term recovery discussed here is shown in Figure 4.

According to ALNAP: 'Although it is generally accepted that there is always a link between humanitarian action, recovery and development, and that humanitarian action should establish a framework for recovery, there is currently no consensus concerning the extent to which humanitarian action should support longer-term needs.' (ALNAP, 2006, p.27). The key messages of 'connectedness' (see box 9) are that large-scale relief programmes can have significant long-term consequences, both good and bad, and that there should be an evaluation of whether funds have been used for relief or recovery, and that this should pay particular attention to institutional factors, in particular the existence of strong partnerships, and the extent to which national or local capacity is supported and developed (ALNAP, 2006, p.29).

The Evaluation of DEC India earthquake appeal funds after the Gujarat earthquake in 2001 is quoted by ALNAP as a good practice example (ALNAP, 2006, p.31). It notes that good partnerships and local capacity played a key role in successful interventions, but that few agencies made a strategic review at the crucial point when turning from relief to recovery. Moreover, there is little evidence that this type of evaluation after the event has resulted in agencies being better prepared to plan for or engage with the issues of 'connectedness' in their response to disasters (see box 9).

Figure 4 Where planning for medium and long-term recovery can occur before and after a natural disaster



Source: *Max Lock Centre, after RICS 2006, p1.*

LRRD: Linking relief, rehabilitation and development – the concept of 'connectedness' in evaluating humanitarian action

Box 9

In 1991, the Development Assistance Committee of the OECD set out broad principles for evaluating humanitarian practice for its members. These were subsequently refined into widely used criteria for evaluating development initiatives and in 1999 into seven criteria (relevance/appropriateness, connectedness, coverage, efficiency, effectiveness and impact) adapted for the evaluation of complex emergencies.

'Connectedness has been adapted from the concept of sustainability – the idea that interventions should support longer-term goals, and eventually be managed without donor input'. It refers to the need to ensure that activities of a short-term emergency nature are carried out in a context that takes longer-term and interconnectedness problems into account.

ALNAP, 2006, p.10, p.27. Summarised MLC.

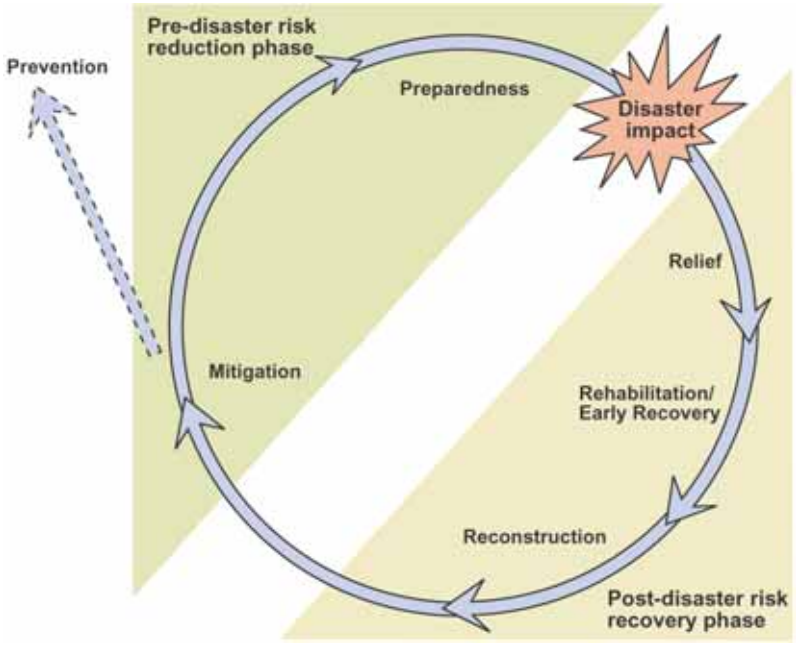
The role of disaster risk reduction and development

Effective lesson learning should reduce the risks of future disasters through well-informed mitigation and preparedness planning. In this respect, disaster management can be visualised as a two-phase cycle, with a post-disaster recovery informing pre-disaster risk reduction, and vice versa, as in Figure 5. In the ideal case, mitigation eliminates the risk of future disaster, though this is a virtuous circle unlikely to be fully realised in all but the propitious circumstances.

Clearly, the risks associated with disasters could be considerably reduced and their impacts mitigated if the disaster cycle was taken as the basis for disaster management. It implies giving greater attention to pre-disaster planning and preparedness, and sharing the lessons from previous disasters, particularly in the process of medium and long-term recovery.

Much effort has gone into developing disaster risk reduction policy and institutions on a global scale from the 1970s onwards. A sea change in thinking about natural disasters as something more than an 'Act of God' occurred following a series of disasters from 1968-73 (the Sahel famine, famines accompanying wars in Biafra and Bangladesh, the 1970 Bangladesh cyclone and Peruvian earthquake of 1972) (UNDP, 2004, p.18). The 1990s were designated as the International Decade for Natural Disaster Reduction with an International Strategy for Disaster Reduction as its outcome in 2000. This was accompanied by an increasing recognition of the links between natural disasters and development and the particular vulnerability of poor people and poor countries to disaster impacts.

Figure 5 Disaster cycle model



Source: *Max Lock Centre based on ACT/CWS. Emergency management training manual. Geneva. Action by Churches Together 2001.*

Disaster risk management terminology Box 10

Disaster risk management: The systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards.

Disaster risk reduction: The systematic development and application of policies, strategies and practices to minimize vulnerabilities and disaster risks throughout a society.

Hazard: A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption, or environmental degradation.

Mitigation: Structural and non-structural measures undertaken to limit the adverse impacts of natural hazards, environmental degradation, and technological hazards.

Risk: The probability of a harmful consequences or expected loss (of lives, people injured, property, livelihoods, economic activity or environment) resulting from interactions between natural or human induced hazards and vulnerable conditions. Conventionally risk in expressed by the equation: Risk = Hazard x Vulnerability.

A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk.

Vulnerability: A set of conditions and processes resulting from social, economic and environmental factors that increase the susceptibility of a community to the impacts of hazards.

UN International Strategy for Disaster Reduction.
http://www.unisdr.org/eng/library/lib-terminology.htm

In the four years between 1997 and 2001, a further series of natural disasters served to heighten this concern. El Niño brought floods to East Africa, South and Southeast Asia, Latin America and the Caribbean in 1997-1998. It was succeeded by Hurricanes Georges and Mitch in the Caribbean, mudslides in Venezuela, the cyclone in Orissa, India and earthquakes in Turkey, Iran, El Salvador and Gujarat in India.

Implementing risk reduction policies, however, presents huge challenges, and requires particular tools and approaches to ensure proper management and resourcing of the reconstruction effort in the wake of disasters that cannot be avoided. Low-income developing countries are normally the least equipped and able to implement disaster planning and risk reduction. At the same time they are the countries most at risk and most vulnerable to the impacts of disasters in terms of their ongoing development.

'Disasters are first and foremost a major threat to development and specifically a threat to the development of the poorest and most marginalized people in the world. Disasters seek out the poor and ensure that they remain poor' (Didier Cherpitat, General Secretary of the IFRC quoted in Oxfam America, 2004, p.12)

Hazard mapping in South Africa

Box 11

In South Africa, various institutions are engaged in hazard mapping. While projects are sometimes conducted in isolation and the data is not widely used, there are other examples where the resulting information is beneficial to additional institutions beyond the one that collected it.

Most hazard maps are becoming available online and they often function as scaled image maps containing additional information about particular areas. The Agriculture Research Council, the National Disaster Management Centre, the Department of Water Affairs and Forestry, and the Department of Health are all using satellite data to compile hazard maps, which then become part of their much larger geographical information systems.

Use of the US National Oceanic and Atmospheric Administration (NOAA) satellite data further enables the generation of locally relevant geo-referenced maps. The National Botanical Institute of South Africa also embarked on the mapping of degradation patterns for the whole of the south of the country. These maps provide valuable information on the state of South Africa's ground cover.

National Disaster Management Centre, South Africa. ISDR, 2004. Summarised MLC.

In 2000, the development agenda of the international community crystallised around the eight Millennium Development Goals and its associated targets (see Appendix 5). As Mark Malloch Brown, former Head of the UNDP and now Deputy Secretary General of the UN, puts it: 'Natural disasters exert an enormous toll on development. In doing so, they pose a significant threat for achieving the Millennium Development Goals, in particular the overarching target of halving extreme poverty by 2015' (UNDP, 2004, Foreword). Disasters constrain development through the destruction of physical and human assets; unsustainable development increases the risk of disaster whilst sustainable development reduces it. (UNDP, 2004, p.20).

A greater integration of disaster management and development planning is called for. One focused and cost effective way in which international development can reduce the risk of disaster resulting from natural hazards is to mainstream disaster risk assessment within the development planning process, and the UN has called for risk assessment to become an integral part of environmental impact assessment. Another is to integrate planning for long-term recovery within the early phases of planning and co-ordinating humanitarian relief in the immediate aftermath of a natural disaster.

International Strategy for Disaster Reduction: excerpts from the UN Hyogo Declaration

Box 12

We, delegates to the World Conference on Disaster Reduction, have gathered from 18 to 22 January 2005 in Kobe City of Japan's Hyogo Prefecture, which has demonstrated a remarkable recovery from the Great Hanshin-Awaji Earthquake of 17 January 1995. ….We are convinced that disasters seriously undermine the results of development investments in a very short time, and therefore, remain a major impediment to sustainable development and poverty eradication. We are also cognizant that development investments that fail to appropriately consider disaster risks could increase vulnerability. Coping with and reducing disasters so as to enable and strengthen nations' sustainable development is, therefore, one of the most critical challenges facing the international community.

We are determined to reduce disaster losses of lives and other social, economic and environmental assets worldwide, mindful of the importance of international cooperation, solidarity and partnership, as well as good governance at all levels. We reaffirm the vital role of the United Nations system in disaster risk reduction.

Thus, we declare the following:

1 We will build upon relevant international commitments and frameworks, as well as internationally agreed development goals, including those contained in the Millennium Declaration, to strengthen global disaster reduction activities for the twenty-first century.

2 We recognize the intrinsic relationship between disaster reduction, sustainable development and poverty eradication, among others, and the importance of involving all stakeholders, including governments, regional and international organizations and financial institutions, civil society, including non-governmental organizations and volunteers, the private sector and the scientific community.

3 We recognize as well that a culture of disaster prevention and resilience, and associated pre-disaster strategies, which are sound investments, must be fostered at all levels, ranging from the individual to the international levels.

4 We affirm that States have the primary responsibility to protect the people and property on their territory from hazards, and thus, it is vital to give high priority to disaster risk reduction in national policy, consistent with their capacities and the resources available to them.

5 We, therefore, adopt, the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters with its expected outcome, strategic goals, and priorities for action, as well as implementation strategies and associated follow-up, as a guiding framework for the next decade on disaster reduction.

6 We believe that it is critically important that the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters be translated into concrete actions at all levels and that achievements are followed up through the International Strategy for Disaster Reduction, in order to reduce disaster risks and vulnerabilities.

7 We now call for action from all stakeholders, seeking the contributions of those with relevant specific competences and experiences, aware that the realization of the outcomes of the World Conference depends on our unceasing and tireless collective efforts, and a strong political will, as well as a shared responsibility and investment, to make the world safer from the risk of disasters within the next decade for the benefit of the present and future generations.

http://www.unisdr.org/wcdr/intergover/official-doc/L-docs/Hyogo-declaration-english.pdf
Edited MLC.

Institutional constraints on co-ordination and planning of disaster recovery

The UK Government's Department for International Development made a commitment to reducing disaster risk in its 1997 White Paper but has been spurred into doing more by the recent spate of disasters. It commissioned a scoping study 'Disaster Risk Reduction: a development concern' (2005) and recently produced a policy paper: 'Reducing the Risk of Disasters – Helping to Achieve Sustainable Poverty Reduction in a Vulnerable World' (2006).

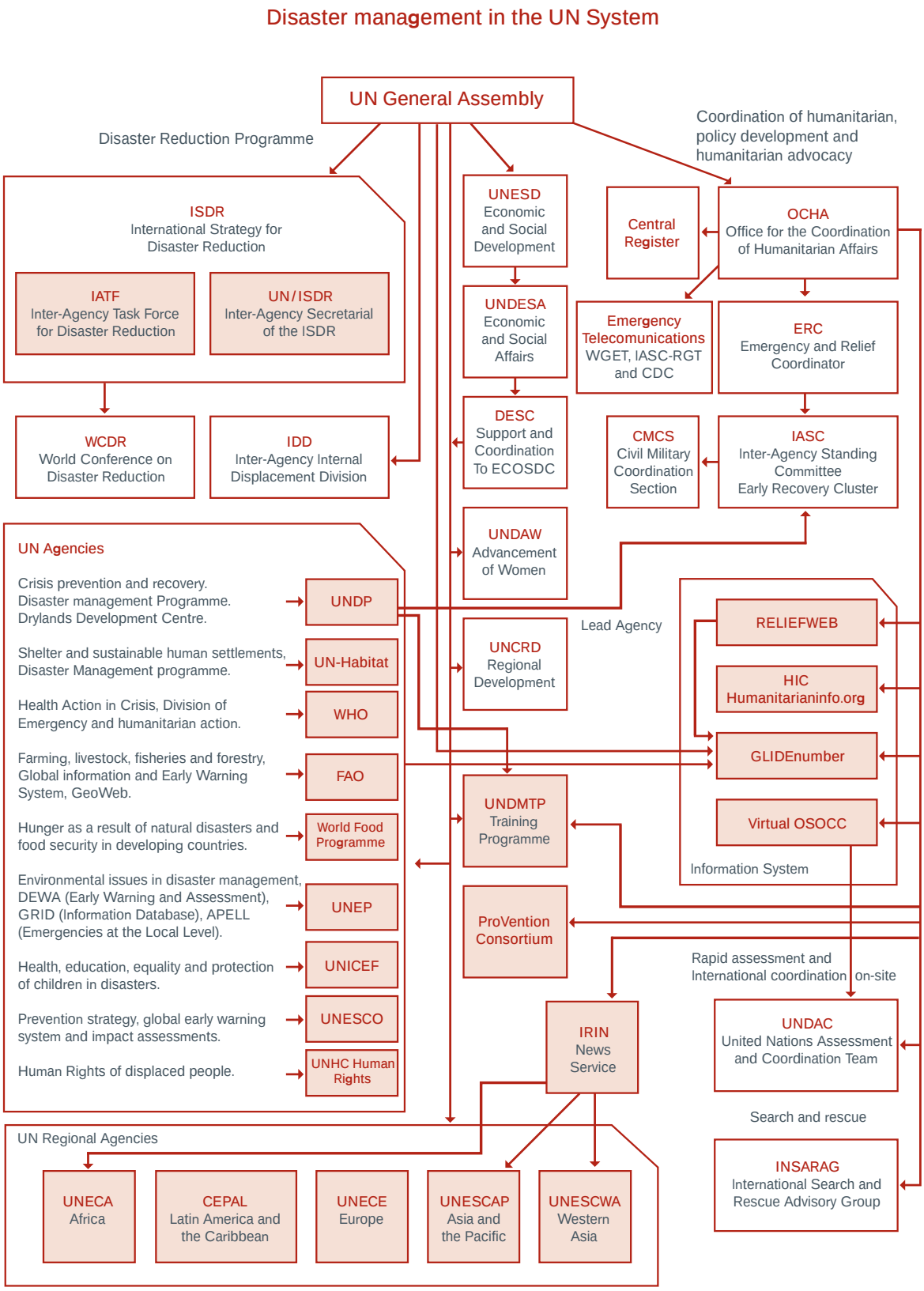
Like most other international development agencies and large international NGOs, however, DFID has hitherto made a distinction in its policies and institutional structure between humanitarian relief and development, with long-term recovery generally addressed by those regional departments or in-country offices concerned with country development. This makes an integrated and co-ordinated approach far less likely to happen.

Within the United Nations, the organisation most concerned with organising and co-ordinating disaster relief and management on a global scale, this situation is more complex, with a multiplicity of agencies involved in emergency relief and disaster reduction activities, whether or not this is the main focus of what they are mandated to do (see figure 6).

The need for strong co-ordination of effort in humanitarian relief has long been recognised within the UN. In 1992, following the Kurdish refugee crisis of the previous year, the General Assembly asked the Secretary-General to designate a high-level official as Emergency Relief Co-ordinator and a Department of Humanitarian Affairs was established within the UN Secretariat. In early 1998, this department was strengthened and transformed into the Office for the Co-ordination of Humanitarian Affairs (DFID, 1999, p.10). OCHA stated mission is to:

'…mobilise and co-ordinate the collective efforts of the international community, in particular those of the UN system to meet in a coherent and timely manner the needs of those exposed to human suffering and material destruction in disasters and management. This involves reducing vulnerability, promoting solutions to root causes and facilitating the smooth transition from relief to rehabilitation and development.' (UNGA Resolution 46/182, 1991, Annex 2).

Figure 6 Institutional complexity in the UN disaster response set-up



Source: *Max Lock Centre.*

In practice, despite the broad scope of its mandate as stated above, in particular 'facilitating the smooth transition from relief to rehabilitation and development', OCHA has often had its work cut out in trying to co-ordinate the immediate humanitarian relief efforts, which has tended to remain the focus of concern. Issues that have been raised in the past include inter-agency problems arising from lack of understanding of OCHA's lead role particularly in an unfamiliar disaster situation, and inter-agency rivalries where a representative of one of them is appointed as the local Humanitarian Coordinator for OCHA (DFID, 1999, p.2).

Within the international community, it appears that lessons are being learned and progress is being made in coordinating the efforts of the major players. After the recent earthquake in Northern Pakistan, the UN, working with the Government and military through ERRA (the Earthquake and Reconstruction and Rehabilitation Authority), instituted a system of clusters to co-ordinate the work of those operating in particular sectors: water and sanitation; shelter; food and nutrition; and health (OCHA, 2006).

This has worked reasonably effectively during the relief phase. However, during the current transition to rehabilitation, it is recognised that there are particularly difficult challenges for this new system of coordination. The long-term recovery process involves transferring greater responsibilities to local agencies, in particular government and local government, and an integrated approach at the local level. The cluster approach, while helpful in drawing together all the agencies working in a particular sector is likely to fail in terms of addressing the broad-based livelihood and recovery strategies of poor people, and misses the connections between the sectors. (ProVention/ALNAP, 2005a, p.2).

Additional challenges are posed in distinguishing between Cluster and Agency responsibilities and ensuring the flow of information between the clusters centralised in Islamabad and the field hubs (OCHA, 2006).

Co-ordination requires management effectiveness, recognition of the existence and leadership role of the coordinating agency and an effective flow of information between the actors involved in relief and recovery efforts at the various levels. There can be problems in any one of these areas or in any combination of them. Individual voluntary efforts and the myriad efforts of smaller NGOs and local community organisations that are so key in disaster relief and recovery may fall outside the remit or well below the radar of the agency co-ordinating the international efforts and/or government co-ordinating mechanisms.

This could be linked to funding. With a greater flow of funding to smaller organisations operating at the local level this might increase the pressure and leverage for reporting back, monitoring and information about, and co-ordination of their activities.

Professionals, with built environment, medical or other backgrounds often work on an individual, voluntary basis and their isolation suggests a greater need for more support from their professional associations. At the very least, they should issue clear guidance about how best their members can contribute to relief and recovery efforts, and in a co-ordinated manner.

Large, international NGOs present different challenges. After the recent South Asia earthquake, the international aid agencies were closely involved with and integrated within the system of co-ordination set up by the UN. However, this is not always the case, with large, resource-rich international NGOs often accustomed to working relatively autonomously, especially relative to local government. And where government agencies are not trusted, donor governments sometimes use NGOs to by-pass government thus encouraging this independence of action. This can be disruptive at any phase in the recovery but particularly in the initial phases where, as in the case of the Indian Ocean tsunami, a glut of funding led to aid mismatch through lack of co-ordination and undermining of the work of smaller, less well-resourced local agencies (see box 14).

Delays in bridging the gap….six months on

Box 13

The government of Pakistan has agreed an action plan with the United Nations to help victims of last October's earthquake rebuild their lives. It is intended to bridge the transition from relief to reconstruction.

Officials have played down reports of a rift between the UN and Pakistan over the drafting of the plan. And all sides are keen to avoid the delays that have slowed other major reconstruction efforts, such as the ongoing work in South East Asia to rebuild regions hit by the tsunami 18 months ago.

… The action plan sets out priorities for helping people adjust from living off handouts to rebuilding homes. Such steps include distributing seeds and livestock and offering food for work.

'The rationale for the only recovery plan is to make sure that there is no gap between the end of the relief operation and full-scale reconstruction,' says Jan Vandermoortele, the UN co-ordinator in Pakistan. 'This often happens for good reasons. Reconstruction is complex and as we speak, in many of the tsunami-affected locations, that gap has developed. We want to minimise it,' he added.

The plan will cost nearly $300m (£170m). The UN already has one third of that and expects to get the rest from existing donor pledges. A private firm will monitor how the money is spent.

… More than 1,800 aftershocks have rocked the region since the largest natural disaster in Pakistan's history, while tremors, rain and snow have also contributed to hazardous landslides. Such dangers are expected to become particularly severe during the monsoon rains expected in June and July.

Barbara Plett, BBC News, 22 April 2006.
http://news.bbc.co.uk/2/hi/south_asia/4935146.stm *Edited MLC.*

Post-tsunami chaos wastes aid

Box 14

Flush with unprecedented funds, many aid agencies wasted money after the Indian Ocean tsunami by failing to consult survivors, the United Nations or other relief groups, according to a report by the International Federation of Red Cross and Red Crescent Societies (IFRC).

'Depending on how you look at it, you can say this has been the best-funded emergency in the world - or the most expensive humanitarian response in history,' a UN officer told the IFRC's World Disasters Report published this week.

Unlike many other disasters, basic needs were covered relatively quickly. But on the flip side, the vast amount of funding meant aid agencies could afford to hire their own helicopters and boats and make individual assessments and distribution arrangements rather than co-ordinate with one another and through the United Nations. By the third week of January there were at least 200 agencies on the ground in Aceh, the Indonesian province that bore the brunt of the disaster. But less than a quarter of them sent reports to the U.N.'s emergency co-ordinating agency OCHA.

'Without knowing who was doing what, and where, some communities were inevitably overwhelmed with aid while others were neglected,' the annual IFRC report said. Rivalries between agencies competing to spend unprecedented budgets and wanting to 'fly the flag' discouraged information sharing, leading to duplicated work and wasted resources.

… The IFRC report said international agencies should also have made better use of national agencies and local organisations. Instead they weakened Indonesia's own aid agencies by luring local staff away with high salaries.

Not only did agencies and officials fail to ask tsunami survivors what they needed, they also neglected to pass on key information on issues such as when they would be relocated to more permanent shelters or receive compensation. This put extra stress on people who were already traumatised…. 'There is a glut of money, a glut of goodwill,' said Raju Rajagopal of the Bhoomika Trust, an Indian disaster relief agency. 'You can't stop people wanting to get involved, but now we have to take time to make sure the relief doesn't destroy communities.'

One glaring example of inappropriate aid was the mountain of clothing sent to southern India, including heavy sweaters useless in the tropical heat. The unwanted clothes ended up dumped on roadsides. Municipal workers had to be diverted from the relief effort to gather them up. As well as blocking roads, wasting workers' time and taking up storage space they proved a hazard to local livestock who tried to eat it.

But Rajagopal said lessons had been learnt. There was not a lot of dumping of medicines as seen after the 2001 earthquake in the western Indian state of Gujarat. Communicating what is not needed can be as important as what is required, the report said.

Emma Batha, 5 Oct 2005. http://www.alertnet.org/thefacts/reliefresources/.htm
Edited MLC.

Recovery with communities

There is a growing international consensus that professional expertise is best directed at communities. The long-term aims of disaster recovery and disaster mitigation are consistent: to build resilient communities and minimise their vulnerability and risk, and prevent future loss of life and livelihoods.

Recovery is different in that there is an additional need upfront to re-establish the equilibrium of communities where lives, property and business have been lost and there has been widespread disruption in their routine. In urban areas the scale of recovery is magnified as disaster affects thousands, even millions of people.

In order to re-establish the equilibrium in an urban or rural population a variety and quantity of professional expertise is required to address the loss and thereafter plan and manage the recovery. As the recent Tsunami in Asia showed, assessment of damage, loss of tenure, replacement of legal documents and status, confirmation of the scale of loss, monitoring of aid and recovery are all part of a complex exercise which is dependent on acceptable methods and a professional steer.

In recent decades the experience of recovery after natural disasters has been shared internationally and initiatives such as IDNDR and ISDR have ensured that disaster recovery is not just seen simplistically as a scientific and technological mission but a process where social, cultural and economic factors are also important.

IDNDR International Decade for Natural Disaster Reduction 1990-1999 Box 15

Given the increasing concerns about the impact of disasters, the UN General Assembly declared 1990-1999 the International Decade for Natural Disaster Reduction (IDNDR). Under the theme ‘building a culture of prevention’, work was done to advance a wider commitment to activities that could reduce the consequences of natural disasters. As the decade progressed social, cultural and economic consequences of natural disasters came to be recognised by the international community.

ISDR International Strategy for Disaster Reduction

The ISDR stemmed from the understanding during IDNDR that disaster reduction was a social and economic imperative that would take a long time to fulfil. The UN general assembly continued to fund ISDR from 2000 as the successor to IDNDR.

Best practice has been aiming to remove the gap in communication and knowledge between the providers of the recovery process and those who benefit from it. When recovery was delivered from 'above' it entailed several problems, some of them outlined below:

'Perceptions of the recovery process are not the same among those who are administering the recovery process and those who are recipients. For the agencies, governmental or voluntary, who administer assistance, efficiency and speed are prime considerations and attitudes and customs which tend to impede these priorities are deplored. For the recipients on the other hand both the disaster and its aftermath are disruptions in the flow of their lives and the desire to retain customs, practices and behaviour patterns which ensure a measure of stability even if they are a hindrance to effective external relief is of great importance' (Aysan and Oliver, 1987).

It has gradually been recognised that the start of any recovery process requires an understanding of the local life and culture and underpinning the routine and the familiar will always restore the confidence of the people whose life has been affected by the disaster. Repair of religious structures and seeking advice from local leaders is an important step to start the channel of recovery.

Some good work done has been to involve the affected people in the recovery process, which can enable the use of local knowledge and resource. At the same time communities can benefit from international experience and methods to streamline recovery and minimise risk.

The challenge then to the professionals is to translate and transmit their expertise in managing and planning the recovery at a vast scale in order to work effectively with the communities.

As the examples show (see box 17), current practice is moving towards decentralised delivery of the recovery process. Professionals are increasingly involved in education, training and transfer of methods. The correct estimation and survey of damage and fulfilling obligations for speedy recovery which includes servicing claims, operating better records, accountability and auditing and simplifying regulations and frameworks is part of the professional intervention in the more efficient recovery process.

Community Asset Management and long-term disaster recovery — Box 16

Effective long-term recovery after a natural disaster will require the continued and cost-effective maintenance and management of community assets and infrastructure, particularly livelihoods related assets. The involvement of the users in the maintenance and management ensures that this is possible at a large scale and will also reduce the vulnerability of the community at several levels through building safe construction skills, providing livelihood and income and ensuring that essential infrastructure is kept in good condition.

Community Asset Management or CAM is the management of physical assets in collective use by urban or rural populations. CAM envisages improved capacity of low-income communities for the management, life-cycle planning, regular care and construction work for new and existing community buildings. Demonstration of CAM methods in India and Africa have shown that the experience of conducting repair related tasks in a systematic manner such as condition surveys, maintaining accounts and records can become the basis of a training programme to build capacity in other communities for community asset management.

Capacity building can be undertaken in the following steps:

1 Identification of assets and their condition

- Listing the experiences and analysing the skills of the community to manage and implement any repair and maintenance programme
- Generating awareness and capacity building regarding asset management in the community as well as local authorities
- Physical survey and identification of community assets to be repaired and upgraded through discussion with local community.

2 Orientation the stakeholders

Presenting the tasks of repair and recovery to different target audiences from such as policy makers, administrators, accountants, community, masons, surveyors, engineers and building centre managers and supervisors.

3 Capacity building for technical group

Specialist training programmes conducted for supervisors. A training programme to discuss methods of completing condition survey and distress analysis, basic housekeeping and minor repairs, book-keeping, site management, quality control, procurement of materials and manpower management.

4 Condition survey of assets

- Physical inspection of the community assets to explore various options for their repair and upgrading
- Making an inventory and determining priorities through community participation
- Analysis of the distress and recommendations
- Preparing estimates for works, and comparative cost-benefit of repair, retrofitting and making new buildings
- Planning for the procurement of materials and labour
- Analysis of the distress and recommendations
- Preparing estimates for works, and comparative cost-benefit of repair, retrofitting and making new buildings
- Planning for the procurement of materials and labour.

5 Demonstrations

Demonstration of the CAM process at key sites can ensure that stakeholders are equipped with the right skills and shared understanding before the rebuilding is scaled up.

http://www.maxlockcentre.org/CAMweb/CAMdefault.html

Social funds and post Hurricane Mitch reconstruction

Box 17

In both Honduras and Nicaragua, social funds played a key role in helping communities cope and rebuild after Hurricane Mitch, in October 1998. The Honduran Social Investment Fund (SIF) was decentralized to the most heavily damaged areas in order to work closely with communities and municipalities to assess immediate needs for shelter, water, sanitation systems, road access and bridge rehabilitation.

Special authority and procedures granted to the SIF regional offices enabled SIF emergency response teams to act on location, enhancing their capacity for rapid, effective project placement. Within 100 days, 2,100 projects were executed, with a total value of US $40 million, and another 2,500 projects were identified or appraised with a total value of US$ 57 million.

In Nicaragua too, SIF teams were quickly decentralized, setting up offices in four regions. A 72-person task force of architects and engineers was deployed to the affected areas. There, they worked to settle the homeless, to provide water and sanitation systems, to open rural roads and rehabilitate bridges. The SIF technical team guided local government units in contracting community firms, hiring 200 local architects and engineers to locate sites to settle the homeless, installing water supply and sanitation systems in the settlement camps, and tackling extensive infrastructure rehabilitation. Within three months, about 1,300 projects were executed with a total value of US$ 12 million.

ISDR, 2004; 'The Rough Guide to Community Asset Management' pp 98-101. MLC Press 2005. Summarised MLC.

Reconstruction and the transition from humanitarian relief in recent disasters

The challenges for reconstruction and rehabilitation

2005 was portrayed as the year of natural disasters: 'From the Boxing Day tsunami to the broken levees of New Orleans to the shattered mountains of Pakistan, people worldwide have faced unprecedented catastrophe' (Christian Aid, 2005, p.3).

The official toll for the tsunami and earthquake in Indonesia of December 2005 is 223,492 with unofficial estimates up to twice this figure. At least 2.5 million people lost their homes and 400,000 houses were reduced to rubble. 1.4 million people lost their livelihoods. 3,000 miles of road and 118,000 fishing boats were damaged or destroyed. The disaster, which had an impact across 12 countries, is estimated to have caused $10 billion worth of damage according to early estimates of multi-agency assessment teams. (UN Office of the Secretary-General's Special Envoy for Tsunami Recovery, 2005, pp.1-2).

A year and a half after the tsunami most people who lost their homes are without a permanent roof over their heads and many still face an uncertain future. This is despite the record public and donor response resulting in a quick and largely successful immediate human relief effort. According to Oxfam, 12 months after the tsunami, around 20% of the people made homeless will have been in satisfactory permanent accommodation (Oxfam International, 2005, p6). In September 2005, the Office of the UN's Special Envoy for Tsunami Recovery reported that it would take another 12-18 months before every displaced person in Aceh had adequate transitional accommodation. It called this 'an unacceptable situation that needs to be urgently addressed' (ibid; www.tsunamispecialenvoy.org/briefs/shelter.asp)

The total need in India, Indonesia and Sri Lanka is for 308,000 homes for the 1.8 million people who were made homeless. In Aceh, in late October 2005, there were still 436,820 displaced people living in organised 'barracks' (see box 25), tent cities or (more than half) with host families. The government agency BRR (Aceh and Nias Rehabilitation and Reconstruction Agency) predicted in November that 23% of the 80,000 permanent house needs would be completed by the end of 2005 and 71% by mid-2006 (Oxfam, 2005, p.6).

In India, the World Bank and ADB estimate that over 150,000 houses were damaged or destroyed. The government in Tamil Nadu had plans to build 130,000 houses, of which 37,000 had been planned, work begun on 9,000 and 1,000 had been completed (Oxfam International, 2005 pp.6-7).

In Sri Lanka, according to the UN, 516,159 people were made homeless and 98,000 homes were destroyed or suffered major damage. A year later, 4,299 new houses had been built and another 25,000 were planned, of which 10,707 were under construction. Start had yet to be made on planning the remaining 68,000 dwellings (GoSriLanka, 2005).

According to Oxfam, 'it is clear from the response to other earthquakes – in Bam in Iran for example – that it can take two years before a programme for rebuilding permanent homes starts to reach its optimum production levels' (Oxfam International, 2005, p.3).

The delay in providing permanent housing for the majority of victims highlights the importance of providing appropriate transitional shelter, for whom 'temporary' can be a very long time. In Sri Lanka, the President celebrated the fact that 50,000 transitional shelters had been put up in six months but, with the start of the monsoon season, many of these temporary homes were already in need of upgrading (Oxfam International, 2005, p.5).

Governments are naturally concerned to provide adequate temporary accommodation as quickly and cheaply as possible and normally turn to centrally-planned solutions without consulting with the users. Barrack-type solutions are commonly employed and, although these may meet Sphere space standards (the international project standards guiding humanitarian response to disasters: see Appendix 5), they are not occupied with dignity (Oxfam, 2005, p.5). According to one aid agency observer, In India government-planned temporary housing consisted of 'corrugated roof and wall structures without windows or ventilation…Thousands of these shelters were built barrack-style, usually without consultation with communities and sometimes on inappropriate sites' (Oxfam International, 2005, p.6).

It is possible, however, to work quickly and directly with communities to meet their needs. In their tsunami recovery programme, for example, Oxfam aimed to 'consult with displaced communities and provide them with information about their options….as well as act with as much flexibility as possible, using local resources and structures' (Oxfam International, 2005, pp.4-5).

In Northern Pakistan, an estimated 3.3 million people were left homeless, officially 86,000 but possibly many more have died (Christian Aid, 2005, p.5). 500,000 houses were left to be rebuilt or in need of repair and 12,000 formal and informal schools collapsed or were irreparably damaged (Arif Hasan, 2005, p.1). In contrast to the Indian Ocean tsunami, the relief effort was hampered by an initial lack of funds. The logistical problems of reaching families and communities stranded in remote mountain regions with roads blocked by landslides made the rescue effort that much more difficult.

In both disasters, the impacts were hugely magnified by lack of preparedness. The lack of an early warning system meant that coastal areas that were hours away from impact of the wave following the earthquake in Aceh and could have taken mitigating measures failed to do so. Early warning systems are now in place in a number of countries but there are other lessons to be learned, in particular raised public awareness of tsunami characteristics in coastal areas at risk. Many could have taken refuge in multi-storey buildings in the vicinity. Others died needlessly on the beach out of curiosity as the sea receded prior to the first wave's impact. Others were unaware that the first wave impact was one of a series and not necessarily the largest.

Asian earthquake victims 'missing out on school' Box 18

Many children are still being taught in makeshift classrooms six months after the earthquake which hit the Kashmir region.

'Nearly 300,000 children are still unable to return to school six months after the south Asian earthquake, according to a children's charity. In a briefing released this week to mark the six-month anniversary of the earthquake, which killed an estimated 87,000 people in northern Pakistan, India and Afghanistan on October 8 last year, Save the Children reported that pupils in Pakistan are desperate to return to school.

A total of 7,669 schools were destroyed in the earthquake, killing 18,100 students and affecting 790,000 children. So far 500,000 pupils have returned to school, but many are still being taught in makeshift tents and buildings. The charity is providing temporary classrooms for up to 600 schools and 60,000 children in Pakistan over the next two years, but warned that the scale of the problem meant more assistance and funding was urgently needed.

'Missing out on an education has a profound effect on a child's future,' said Jasmine Whitbread, the chief executive of Save the Children, who recently returned from Pakistan. 'The longer a child is out of school, the higher the risk that they will never return and will be put to work. If the government of Pakistan, the UN and international donors don't prioritise getting these children back into school soon they will have failed them.'

The charity has made a number of recommendations to get children in these areas back to school. It has called for a mass teacher training programme to replace the staff killed in the earthquake, improve the quality of education and reduce class sizes. The charity also wants the international community to rebuild and improve the quality of school buildings, ensuring that temporary structures are provided so that lessons are not held in tents 'for years to come'. It says catch-up classes should be provided for children who have missed months of education and allowances made for those who missed exams because of the earthquake.

… 'It is now vital that the local and federal government, and responding agencies, work hard to ensure that this head start is not lost, and also to seize the opportunity to improve school buildings, ensure greater access to education, especially for girls, and increase teacher training,' the briefing says. 'The earthquake has also created an opportunity for agencies to work with the government and communities to increase access to quality education in areas where, traditionally, access has been limited.'

The recommendations will be presented to the government of Pakistan and the district governments of Kashmir.

Aldred, J., 2006. The Guardian 7 April 2006. Summarised MLC.

Award for tsunami warning pupil

Box 19

A schoolgirl who raised the alarm to save about 100 tourists from the 26 December tsunami has been honoured, Tilly Smith, 11, from Oxshott, Surrey, spotted key signs in the sea in Phuket, Thailand, that she remembered from a geography lesson two weeks earlier.

She persuaded her parents, seven-year-old sister and other tourists to flee their beach and hotel. When the tsunami struck, no-one was killed on that beach. Tilly received an award from the Marine Society.

… Tilly has praised her geography teacher Andrew Kearney, who showed her class at Danes Hill Prep School a video of a tsunami in Hawaii. She said: 'I noticed that when we went down to the sea the sea was all frothy like on the top of a beer. It was bubbling. I was having visions from the Hawaiian videos that I had seen two weeks before.' She told her mother, who had helped with her geography homework, and her father, who alerted a security guard. …The family took refuge in the hotel with the wave only minutes away….

BBC News Friday, 9 September 2005.
http://news.bbc.co.uk/2/hi/uk_news/4229392.stm *Edited MLC.*

The need for better-targeted and programmed funding

After the tsunami, a Flash Appeal of $1.1 billion to meet the immediate relief needs was launched by the UN and 85% of this was pledged within 4 weeks. $13.6 billion was committed to the post tsunami recovery through official and private pledges to meet the bill of $10 billion to reconstruct the communities destroyed. (UN Office of the Secretary-General's Special Envoy for Tsunami Recovery, 2005, p.2).

However, a question mark hangs over what the actual spend will be. For one reason or another local capacity does not seem to exist. Governments are blamed because of the bureaucratic and political hurdles they pose. Big international NGOs and agencies are blamed because they are unable or unwilling to stretch their accountability beyond a limited range of local partners. Either way, in the particular case of the tsunami disaster, the problem doesn't seem to be money, but a lack of capacity and political will to spend it effectively.

Substantial amounts of humanitarian aid are regularly spent on recovery rather than relief (ALNAP, 2002). Drawing on official estimates from various sources, the Tsunami Recovery Network estimated that just over $2 billion was paid to relief agencies in the first six months after the tsunami (TRN, 2005, Annex 4, p.35). Although, there was some early reconstruction, the vast bulk of these funds were spent on early relief work. With the estimate of the damage across all affected countries running at between $10 and $11 billion, this means that at least 80% of the cost of the disaster relates to the longer-term reconstruction and recovery effort. According to ALNAP: 'Housing and infrastructure development often account for up to 50% of recovery disbursements.' (ProVention/ALNAP, 2005a, p.5).

At the same time, it is estimated that up to 90% of the funding during the relief phase is spent on procurement and logistics, including air drops and other transport needs. High tech solutions are expensive. Helicopters are used while opportunities for sourcing of relief materials locally, which could be aided through appropriate professional inputs, are missed. 'While not always sufficient to meet full relief requirements, local procurement brings knock on effects to local economies…' (Wilton Park, 2004; ProVention/ALNAP, 2005a, p.5).

According to the 2005 Mid-term review of the Consolidated Appeals Process 'while humanitarian emergency operations have been in general well funded…sectors such as critical infrastructure/ environment, shelter/non-food items, restoration of livelihoods, agriculture and capacity building remain under funded' (CAP, 2005, p.115). As noted in the report of UN Office of the Secretary-General's Special Envoy for Tsunami Recovery in December 2005, however, official and private pledges were more than enough to meet the reconstruction needs, and indeed this was the case six months previously.

One probable cause for the delay in making these funds available for the purpose for which they had been allocated may be in the poor accounting and lack of accountability for the funds already spent

during the relief phase (see box 20). Stringent reporting requirements during the aftermath of a disaster were viewed as hindering the relief effort. When it comes to funding longer-term reconstruction, however, normal standards of accountability will be back in place, and donors may tend to demand even higher levels of stringency to offset confusion over funds previously allocated.

A further consequence of the demands for accountability and the pressure to disburse funds is that donors tend to set timetables for spend on recovery that are too short. The real recovery period, the one that governments have to observe, may be up to or even more than five years, but out of expediency they have to observe the timetables of the donors with resulting confusion and uncertainty (ProVention/ALNAP, 2005a, p.2).

Britain demands return of unspent tsunami aid — Box 20

Millions of pounds of taxpayers' aid money destined to help victims of the Indian Ocean tsunami is still stuck in the bank accounts of World Bank and United Nations organisations a year after the disaster, a report by the National Audit Office, Parliament's financial watchdog, revealed today.

The Department for International Development has now asked all the organisations to either account for the money or return the cash to Britain so it can be reallocated for fresh disaster work. Britain originally allocated £75m to help the millions of victims of the disaster which struck on Boxing Day in 2004 and killed 300,000 people. But it held back £3.9m in reserves and diverted £7.5m to other disaster efforts when it became clear that not all the money was being spent.

Some agencies, notably the Red Cross and the Red Crescent which received £3.5m between them for emergency supplies, acted swiftly and have spent all the money. The Red Cross organised an emergency airlift of supplies 24 hours after the disaster struck. Other organisations, notably the World Bank multi-donor trust fund for Aceh in Indonesia, which was given £4m in September, were hit by bureaucracy. By December last year it had still not spent much of the money on reconstruction programmes and £1.1m has yet to be allocated to specific projects.

Sir John Bourn, the comptroller and auditor-general, said today: 'The speed of DFID's response after the tsunami was impressive, and demonstrates the importance of planning for disasters. The scaling back of expenditure against the £75m of humanitarian assistance promised was justified, given the generosity of other governments and people from around the world. But it remains important to keep control over the £50m paid in grants to other organisations, and to know how it is spent.'

Edward Leigh, the Tory MP who chairs the public accounts committee, joined the praise for the quick response, but said ongoing doubts about where the money went were unacceptable. 'One year on from the disaster, the department don't know where that money went. They don't know if it was used, where it was

needed or if it's just sitting idly in a bank account. That is not good enough. The department must look much more closely at how these considerable sums of money are being used by the agencies involved.'

A spokeswoman for DFID said: 'DFID only provided funds for tsunami relief work to trusted third parties - aid agencies, NGOs, many of which we work with often – and only after agreeing a detailed programme of work.

'... Burdening our partners with too much red tape, in the form of even more stringent reporting requirements could have constrained their ability to deliver urgent humanitarian relief. Clearly this would have defeated the object of the exercise – to help the many thousands of people in desperate short-term need.'

'Now the immediate disaster phase has passed and rebuilding and reconstruction work has begun, DFID has asked partners to fully account for their spending and to return any unspent funds.'

Hencke, D., 2006. The Guardian, February 28, 2006.
http://www.guardian.co.uk/tsunami/story/.html

More haste – less speed: barriers to achieving a stable, ordered, sustainable recovery.

In the aftermath of a natural disaster there is considerable pressure for quick results. Part of this is a natural concern to attend to the immediate and pressing needs of those who are suffering. At the same time, other institutional factors come into play. Donors are keen to see both quick results and a rapid disbursement of the allocated funds – to get the money out the door. Many agencies have a mandate that is limited to short-term humanitarian relief and are anxious to do their job and be prepared to move on to the next emergency.

After the Gujarat earthquake, 'managers on the ground began to see their task as spending money within the (DEC) timetable rather than planning good programmes' (DEC, 2001, p.10; ProVention/ALNAP, 2005a, p.2). The quick fix can have a knock-on effect on long-term recovery. 'Government and agencies, for example, may spend excessive money on emergency shelter to the detriment of transitional shelter or permanent reconstruction. Often there is inadequate or no finance and human resources left for permanent reconstruction. If there is inadequate planning, transitional shelter can evolve into permanent housing leaving affected people with poor quality housing.' (ProVention/ALNAP, 2005a, p.4).

The pressure for quick results works against the process of iterative planning and community participation, although all the evidence is that people affected by disasters want to participate fully in the response (ProVention/ALNAP, 2005b p2). There are, of course, conflicts between addressing the needs of community involvement to ensure a stable, appropriate and sustainable long-term recovery, and the concerns of making the recovery period as short as possible, which, on the face of it implies top-down, technocratic solutions. Win-win solutions involving the community and foreshortening the recovery period are hard to achieve and critical choices may need to be made.

ALNAP suggests that the lessons from the Nahrin earthquake in Afghanistan in 2002 and the earlier earthquake in Gujarat is that agencies need to be realistic about what can be achieved (ALNAP, 2003; ProVention/ALNAP, 2005b, p.2). In Nahrin, agencies launched a self-build reconstruction programme involving technically supervised, earthquake-resistant house designs. However, because of the difficulty in obtaining brick and stone, shortage of labour and pressure of other livelihood activities, and with winter beckoning, local people reverted to traditional non earthquake-resistant mud and straw construction.

At the same time, with better planning, logistics, project management and local knowledge of procurement, more funding in technical and professional support, and a programme that could draw more widely on external support generally, employing a range of technical solutions, it may just have been possible to make such a well-intentioned programme succeed.

The implications are that a more flexible and well-funded framework of technical and professional support to local effort is required. Early and thorough knowledge of local conditions, both in terms of damage inflicted by the disaster on buildings and infrastructure, and in terms of the availability of supply of materials, labour and expertise is essential. At the same time, it may be inappropriate to look for a 'silver bullet' in terms of a single solution to reconstruction, whether high tech or exclusively concerned with employing appropriate technology and local resources (though there are other reasons why this should be the more favoured solution).

One of the reported lessons of recent earthquakes is that a range of temporary and permanent shelter options should be provided wherever possible. Diverse needs, conditions and location need to be addressed (ProVention/ALNAP, 2005a, p.4). Designs need to be culturally appropriate, which means that close involvement of the users is essential. The international Sphere project standards guiding humanitarian response to disasters need to be adhered to (see Appendix 5). At the same time, as we suggest here, an element of choice can help overcome the hurdles associated with a single approach.

Two views of reconstruction in Pakistan

Box 21

'… With the advent of spring, the government has launched a massive reconstruction project backed by $6.4bn in international pledges.

Major General Nadeem Ahmad is deputy head of the Pakistani agency charged with organising the task. He rattles through the "grand strategy for rebuilding villages and cities spread over 30,000 square kilometers… All the rebuilding of the housing is owner-driven, We're ensuring that the homes are seismically resistant. We're setting up 11 reconstruction training centres that will provide guidance to the people."

Such confidence characterised the army's approach to the relief operation, carried out successfully through the winter with international aid agencies. But seven months on from Pakistan's worst natural disaster, discontent is rumbling. Muzaffarabad, the capital of Pakistan-administered Kashmir, was near the epicentre of the earthquake. Prodded by the government, most people have vacated the emergency tent camps set up for the homeless. But some 60,000 people remain.

Seventy-year-old Abdul Rashid is one of them and he's waiting for his compensation. Like other earthquake victims, he got an initial emergency payment of $400, but his cheque bounced. And now the donors are demanding a survey of damaged houses before they hand over the rest of the money. That will take at least two more months. "My house is damaged and the houses of my two sons collapsed," he says with resignation. "Nobody's come for the survey yet, and we don't know when they will."

Complaints are rife about the complexities of registering homes and documenting land ownership according to the new procedures. Soon the monsoon rains will stop any construction. In the meantime the cost of building material is rising. Reconstruction "is easier in the rural areas," says Farooq Haider Khan, special assistant to the prime minister of Pakistan-administered Kashmir. "If you talk about Muzaffarabad, we have to rearrange the city, and it will take time. And the people are getting restless. I think only 10-15% will be able to build new houses by winter."

That restlessness has fuelled several demonstrations against the new compensation rules. And there's growing resentment about what's seen as the central government's excessive control of the process. "Our campaign is directed against the Pakistan government, the army, and the international aid groups," says Shujad Kazmi, one of the organisers of the protest rallies. "Our local government failed to play its role and raise the voice of the people. We know it's been bypassed by the central earthquake authority."

"Our authority has diminished," agrees a Kashmir official, "and it's difficult to get back power that's been eroded." So Pakistan's government has its master plan, and in principle, billions of dollars in donor money. But on the ground in Kashmir, patience is wearing thin. Local elections scheduled for July could be the next focal point for discontent, with campaigns fed by grievances over reconstruction and compensation.'

Barbara Plett, BBC News, 8 May 2006. [Quote from original edited].
http://news.bbc.co.uk/2/hi/south_asia/4750543.stm

Building issues in disasters and reconstruction

The earthquake in South Asia highlighted the ever-present problem of poor building standards in developing countries. Quoting a recent Christian Aid report: 'We in the West get better at constructing safe buildings while tens of thousands die in Pakistan for lack of basic building standards. In San Francisco…..the last major earthquake caused the death of 62 people. In Turkey, an earthquake of similar magnitude killed 17,000.' (Christian Aid, 2005, p.3).

In some earthquake-affected areas as in Afghanistan, houses are self-built using traditional methods, which are not-earthquake resistant. There is, however, often an indigenous awareness of good and safe building practice with much excellent research. The gap lies in its widespread dissemination and practice. There is a role, here, for the surveying and other professions and their professional institutes. In northern Pakistan traditional masonry construction in the karakorams includes timber ring beams that provide some stability, protecting against minor quakes, but these techniques have largely been abandoned and are not used in modern public construction such as schools.

It is unrealistic to expect effective monitoring of housing and other local construction by local government inspectors in remote areas but there are often quite simple ways in which traditional methods can be made more earthquake-resistant. It is important for the future that a culture of local good practice is established through general awareness raising, education and training of key intermediaries such as local craftsmen and suppliers.

In towns and cities, building codes may be inappropriate or out-of-date and even where appropriate standards exist, they are frequently not enforced. Local governments are poorly resourced with few skilled professional staff. Rapid urbanisation stretches available capacity. Contractors cut corners and bribe poorly-paid officials. Even buildings constructed in government programmes, as with the schools that collapsed in northern Pakistan, are not built according to appropriate standards. In slums there are no inspectors to check buildings, or advise on earthquake-resistant construction methods. It is usually the very poor who suffer most, although interestingly, in the Maharashtra quake in 1993 it was often the wealthy who died as their new modern monolithic masonry structures collapsed on them whilst the poor living in flimsy shacks survived. The surviving rich households, however recovered rapidly.

The challenge for reconstruction is to ensure that what is built is better than what it replaces, without sacrificing cultural appropriateness and support for local economic recovery for the sake of technical efficiency and expediency. Mass produced housing may be quick to ship in and erect but it is seldom appropriate to need or sustainable.

The use of local labour and materials is an important stimulus to the recovery of the local economy, although the impact on local markets, prices and the potential for corruption needs to be kept in mind (ProVention/ALNAP, 2005a, p5-6). It is important the relief agencies undertaking reconstruction receive appropriate professional advice in procurement and contract management (see box 23).

Collapsed buildings take heavy toll as Pakistan earthquake buries thousands

Box 22

'The heavy toll of casualties caused by the earthquake that struck Northern Pakistan….is undoubtedly due to the collapse of so many of the buildings under which people were buried, … An example of how faulty construction can be exposed when subjected to the intense stresses exerted by seismic shocks comes from Islamabad, close to the epicentre of the earthquake that devastated Pakistan. … This is a relatively new city, built to create a government centre in the 1960s. On Saturday morning 8th October, under the impact of 7.6 Richter scale shocks, while most other buildings remained standing, the Margalla Tower block in one of the city's residential sectors collapsed, burying most of its occupants.

Hammad Husain, former chairman of Pakistan's Institute of architects (Islamabad Chapter) contributed the following commentary to the Islamabad News Internet edition:

"If the earthquake ground motion is strong enough to shake up and damage buildings, then its effect in most cases is uniform on all buildings in the area. Then why do some buildings collapse and others don't? The answer to this question lies in the structural design and construction of the building……".

In mid-rise buildings, most Pakistani engineers only employ shear walls which are supposed to resist lateral forces and keep the building stiff. However, shear walls in regions with high seismic activity like Japan or Turkey (or Islamabad) are not enough to make a building earthquake-resistant. Since the devastating earthquakes of the recent past including Kobe (Japan) in 1995 and Turkey in 1999, engineers have devised various techniques for minimising risk of building collapse.

Building debris such as timber and masonry can be vital to the recovery process and should be collected for re-use or recycling wherever possible (ProVention/ALNAP, 2005a, p.6). In the case of the earthquake in northern Pakistan, rubble from landslides, particular when it needs to be cleared, is an important potential source of building material (Arif Hasan, 2005). 'Local owner-driven solutions using salvaged materials, augmented with lightweight roofing materials and insulation, can significantly speed the provision of shelter and provide important psychological benefits by including affected people in the remaking of their societies' (ProVention/ALNAP, 2005a, p.6).

Where local skills and labour are available and there is a tradition of self-build, it is possible to rely largely on local effort. With additional professional expertise and limited and targeted imports of particular building materials, it is also possible to ensure that what gets built will be the best on offer to withstand future threats and can be erected in the shortest possible time.

Currently, reconstruction is something of a chaotic affair. It is always possible to find examples of good practice, with some agencies providing new housing to high standards meeting the needs of local people, including cultural and gender needs, and being rapidly erected in suitable locations. On the other hand, sometimes within the same location, there are the remnants of whole communities living in inadequate temporary shelter with no idea of when and where they might be rehoused.

These include base isolation, diagonal bracing and passive damping. Base isolation works by separating the building from the moving ground. Teflon pads, large rollers, springs or other devices allow the ground to move under the foundation without transmitting all of that motion to the building (like pulling the tablecloth out from under the plate and having the plate stay still). Diagonal bracing helps resist shearing forces that come from the swaying motion of a shaken building.

The fact that only Margalla Tower collapsed while its neighbouring Al-Mustafa and Park Towers stood their ground indicates that the problem lies either in the structural design or the construction of the building, and not in the seismic wave caused by the earthquake. In the larger context, the problem lies with the regulatory authorities like CDA that have been negligent in enforcing proper checks on design and construction of large-scale buildings.

The Pakistan Engineering Council and the CDA need to review their building code regulations and law enforcement and verification systems, especially for the high rise towers and apartment blocks mushrooming all over the capital with alarming speed, and make sure they are structurally sound and earthquake resistant. The command and control system should be made public so that greedy developers and callous engineers and contractors are not allowed to put precious human lives at risk.

… Later Ijazul Haque, Federal Minister for Religious Affairs, revealed that the Margella Towers had been declared dangerous ten months before, but explained as the reason for the failure to evacuate the building that the residents were not ready to vacate the apartments that they had bought at high prices.

However that may be, they certainly paid a high price for staying put. As the Minister spoke, many people were still trapped under the collapsed blocks.'

CIOB, 2005. http://www.ciob.org.uk/news/view/906 *Edited MLC.*

Some agencies may be throwing up imported prefabricated houses in unsuitable locations with designs and layouts that nobody wants. Yet other agencies, meanwhile, conscious of the need to re-house people quickly, will be sacrificing quality for speed. Their efforts are more likely to fall prey to unscrupulous contractors and suppliers.
In and among the efforts of the major players, communities and families, frustrated by the bureaucratic delays of officialdom and/or concerned about securing their land, will be taking matters into their own hands and rebuilding their houses themselves. A recently published internal report commissioned by the Red Cross (see box 26) suggested that it ventured into the unfamiliar area of permanent house building simply because it was too flush with funds.

In each of these circumstances, the absence of proper planning and consultation, and/or proper technical advice and professional support means that the houses that are built, in one way or another are unsuitable and unsustainable.
An evaluation for CARE, Oxfam and World Vision's of their response to the tsunami in India and Sri Lanka by Bhattacharjee et al. in 2005 found a series of flaws in the design and implementation of housing programmes (ProVention/ALNAP, 2005a, p.6). There was a failure to recognise how long it would take to provide permanent shelter and that delivery of shelter in India was 'highly unsatisfactory, with poor sanitation and drainage, and high risk of flooding, fires and other hazards' (Bhattacharjee et al., 2005, p.24).

Continues on p.67

Save the Children halts Aceh relief after construction faults

Box 23

Aid group Save the Children temporarily suspended building homes and schools in Indonesia's tsunami-hit Aceh province, after finding 'substandard work.' The agency has spent $1 million of its 5-year, $156 million plan to assist victims of the December 2004 tsunami that left 160,000 people dead or missing, and half a million people homeless in the northern tip of Sumatra island.

'Save the Children has uncovered substandard workmanship including in some cases the use of untreated timber in its construction programs in Aceh province,' the U.K-based agency said on its Web site. We expect the contractors to rectify the problems and cover the bulk of the costs, and if required we will look at legal options,' the statement said.

The findings came after Indonesia's Supreme Audit Agency found irregularities in an emergency fund overseen by the National Disaster Management and Refugee Coordination Board totalling about Rp 354 billion (US$39.8 million), said on the agency's chief, Anwar Nasution. He urged the agency to immediately report the status of the money.

Oxfam also temporarily suspended building homes in the province since it found 'tens of thousands of pounds' fund were misused, the agency's Bangkok-based spokeswoman, Gemma Swart, said March 16.

Indonesia ranks 137th in Transparency International's Corruption Perceptions Index for 2005, scoring 2.2. Ten indicates the least corruption, according to the agency's Web site. Paul Wolfowitz, World Bank president and a former U.S. ambassador to Indonesia, praised Jakarta during his visit to Indonesia earlier this month for its progress in fighting corruption but said it has a long way to go tackle graft.

Money down the drain in Aceh

Save the Children and Oxfam were both targeted by unscrupulous building contractors who took their money, only to build structures so flimsy that a new wave would wash them away. Save the Children may have to write off more than dollars 800,000 worth of building contracts. Oxfam, which counts its losses in 'tens of thousands of dollars', has stopped its construction work around Banda Aceh until investigators establish the extent of the abuse.

Indonesian anti-corruption campaigners, who uncovered the Save the Children case, have also assembled a dossier of fraud and incompetence that reveals why the Jakarta government and international aid agencies have failed in their promises to the survivors of Aceh. 'We calculate that 30 to 40% of all the aid funds, Indonesian and international, have been tainted by graft,' said Akhiruddin Mahjuddin, an accountant who investigates aid spending for the Aceh Anti-Corruption Movement. The movement is partly funded by foreign donors and its findings are regarded as credible by embassies and aid agencies….

The aid effort won praise for saving thousands of lives by prompt action to stop disease and to restore clean water supplies. Yet the bereaved, the orphans and the dispossessed are eking out their 16th month in tents and shacks flung down amid palm groves and rice paddies around this sweep of ravaged coast, ringed by sharp-toothed green mountains, in the north of Sumatra.

Funds have been frozen. Projects wait on hold while worried aid administrators fly in and out of Banda Aceh clutching audit reports. Bureaucratic and political paralysis means only 10.4% of the funds allocated by the government have actually been spent, said Akhiruddin.

Of the 170,000 homes promised to the people of Aceh, only about 15,000 have been built, one year and four months after the tsunami….

Jasmine Whitbread, chief executive of Save the Children, said this weekend: 'During routine evaluation and monitoring, we discovered the poor workmanship and immediately took steps to rectify the situation, including terminating the contract and instigating repairs…'

Oxfam has sent in five investigators, including a former police officer, to unravel the skein of apparent corruption that has led to losses in its Banda Aceh office and forced it to suspend construction….The government reconstruction agency is trying to fight internal corruption, said Akhiruddin. It cancelled 90 of tenders in one two-month period last year. But having issued a blacklist of 18 companies deemed unsuitable for contracts, it hastily withdrew the list. Kuntoro Mangkusubroto, the agency's head, is respected for his personal honesty and has pledged to clamp down.

Last week Susilo Bambang Yudhoyono, Indonesia's president, vowed there would 'be no safe haven' for the corrupt. He was backed up by Paul Wolfowitz, president of the World Bank, who has spearheaded tough lending guidelines for borrowers such as Indonesia.

The Jakarta Post (Bloomberg), 2006 http://www.thejakartapost.com
Sheridan, M., 2006 http://www.itp.net/ *Both reports edited MLC.*

Popularising earthquake resistant technology, using local materials in place of inadequate prefabricated solutions

Box 24

After the recent earthquake in northern Pakistan, over 500,000 housing units will have to be rebuilt or repaired to withstand future earthquakes. Around 12,000 formal and/or informal schools have collapsed or have been irreparably damaged.

The scale of this disaster is far too large to be dealt with by the building of model villages, pre-fabricated houses and contractor delivered construction mechanisms that are being proposed by some quarters in officialdom.

The Orangi Pilot Project-Research and Training Institute and the Urban Resource Centre Karachi working with senior structural engineers on simplified approach to be incorporated in manuals that local communities can use. It employs simple well-known. economical technology previously used in Yemen, Iran, and in Maharashtara, India and in the Self-help School Building Programme of the Aga Khan Foundation in the Northern Pakistan.

Arif Hasan, Urban Resource Centre Karachi emailed report copied to Max Lock Centre 25 October 2005.

Internally displaced people confined to barracks in Aceh

Box 25

Before the disaster, many Acehnese had been living in difficult conditions due to the counter-insurgency campaign waged by the Indonesian military against the separatist Free Aceh Movement (GAM). Hopes for a return to normality and a chance to build sustainable livelihoods have been dashed by the government's relokasi pengungsi (refugee relocation) programme. This top-down scheme is moving IDPs (internally displaced populations) out of emergency camps to temporary barracks rather than focusing on rehabilitation and construction of permanent housing as requested by those displaced by the tsunami.

Supposedly built to conform to international standards, the 30-metre long wooden barracks are equipped with electricity and water supplies. Each barrack contains a dozen family rooms of 10m2 in addition to a communal kitchen, two bathrooms and a hall for assembly, study and worship. People living in the barracks are likely to be totally dependent on government handouts with no means of making a living and no work other than possible participation in food-for-work schemes.

Many IDPs are forced to accept relocation as they lack resources to rent or rebuild on their own. They have not been helped by the fact that international humanitarian organisations have appeared to lend support to relokasi pengungsi. The Indonesian government, the UN and a number of NGOs joined forces in a rapid assessment of such relocation sites and the government's National Coordinating Agency for Natural Disaster and Refugees Relief (Bakornas) and the UN's Office for the Coordination of Humanitarian Affairs (OCHA) have jointly coordinated the Joint Relocation Centre Liaison Unit.

Critics argue that the Aceh relocation shows many of the same elements as the transmigration programmes of the 1980s and the forcible relocation of villagers following declaration of martial law in Aceh in May 2003. Human Rights Watch has drawn attention to the Indonesian military's record of housing Acehnese displaced by the conflict in camps where at times their freedom of movement has been restricted and where serious human rights violations have taken place.

No proper attempt has been made to assess the psychological impact of forcing people to live in barracks for possibly as long as two years. Living together in big groups is uncommon in Aceh. People prefer to live in smaller groups clustered around a meunasah (small mosque) at the center of a community. In rural areas the meunasah provides a key marker of belonging and community, a focal point for prayers, meetings or simply hanging out with friendsMembership of a particular meunasah entails a responsibility to care for one another and guard against external threats…. Barracks do not offer privacy and are likely to result in stress, arguments and increased risk of sexual harassment.

Tsunami survivors worry that relocation away from their villages may lead to them losing their land. Many have lost legal certificates and boundaries demarcating fields have in many cases been washed away by the tsunami. Villagers fear that others will occupy and seize their land unless they are able to make frequent visits….

Families who have traditionally depended on fishing are bitterly opposed to the relocation plans and have refused to leave their villages. At public meetings fishermen's representatives have been joined by others in declaring their refusal to leave their land under any circumstances. Their defiance is unprecedented in a society which has hitherto meekly accepted official instructions. However, it will not be easy to continue resistance given the strength of the military and the government's determination to provide no assistance to those who refuse to evacuate their villages.

Age, L., 2005. http//www.fmreview.org/text/FMR/Tsunami/09.doc *Edited MLC.*

Post-tsunami evaluation of Red Cross: 'too much money in the wrong hands'

Box 26

An evaluation of the Red Cross' response during the first few weeks after the tsunami concludes that the organisation faces a serious dilemma because it has so much money, and it must enter areas – like house- building on a massive scale – that are outside its usual mandate. The report was completed in March, but was not released for a year by decision of the Red Cross' international board. Following strong criticism, the evaluation has now been made public….

The evaluation, written by consultant Maurice Herson, notes that the tsunami was a truly exceptional humanitarian disaster for two main reasons: the number of countries affected simultaneously; and the exceptional level of international interest. This resulted in unprecedented levels of public donations, a large part of which went to the Red Cross movement.

Much of the over $2 billion collected by the movement world-wide will be used not for emergency relief, which is the Red Cross' primary mandate, but for recovery and reconstruction. In Herson's opinion, the Red Cross Federation had (at the time of writing one year ago) failed to come to terms with the fact that it was facing something not only bigger but also fundamentally different that what it has ever done before. On the one hand, it was 'stepping into a new league', as a consequence of having many times the financial resources that it is accustomed to. On the other, the Federation was facing the challenge of taking on housing construction programmes on a enormous scale.

The evaluation states: 'The funds available will be useful for the recovery… (but) it is in large measure in the wrong hands. The so-called humanitarian community that takes on emergency response now holds a huge amount of the available funds while the emergency phase is largely over.'

As Development Today reported, within 15 days of its third and final appeal (January 26, 2006), the Red Cross Federation announced it had collected $1.2 billion world-wide, an amount that was deemed 'sufficient' to cover its tsunami activities. (See DT 6/05) But money continued to pour in and, in the coming months, total collections would climb to $2.1 billion.

The evaluator pinpoints this third appeal as being at the origin of the tension between responding to needs and using up money according to donor wishes. He partly blames insufficient information obtained by Geneva where the appeals are put together. The needs assessments were 'not made adequately and fast enough and therefore there (were) not a sound basis for matching emergency needs to funding'.

From the Sri Lankan and Indonesian Red Cross societies came complaints very early on about other Red Cross organisations rushing onto the scene without proper coordination. Wielding huge budgets, they set up operations without sufficiently coordinating with local branches or consulting with beneficiaries. There was also the perception that the actions of these Red Cross branches

were more strongly influenced by their donors and the media than by the needs expressed by the affected communities.

In Indonesia, the evaluation notes, logisticians wasted time dealing with unsolicited, unwanted and inappropriate materials in warehouses. 'There is no excuse for (Red Cross) members to have allowed this to happen,' the evaluation states. The situation got so out of hand that the Secretary General of the Indonesian Red Cross (PMI) had to send out a letter to all RCRC Secretaries General reminding them that 'failure to adhere to…guidelines places the humanitarian activities of the entire RCRC Movement in Indonesia at risk'….

A second evaluation of the Red Cross tsunami response concludes that the organisation has performed well in its traditional areas – basic health care, psychosocial aid and water and sanitation. It has had little success in the area of rebuilding livelihoods, however, and its initial approach to house reconstruction has been even worse.

The report, covering the transition phase from relief to recovery, says the Red Cross made a fatal error by focusing on permanent housing instead of temporary shelters. It is well known, the evaluation states, that permanent housing on this scale takes time; the decision effectively consigned people to living in 'unacceptable conditions for periods likely to extend to several years'.

The Red Cross raised unrealistic expectations, and then failed to deliver, the report states. 'There is a great deal of frustration within the Movement.'

Development Today, 2006. Post-tsunami evaluation of Red Cross.

Continued from p.61

Small NGOs or consultancies that could be providing the appropriate professional support and technical advice to poor households and communities in their dealings with larger agencies or the government, or in undertaking self-build projects, unless they already have an established partnership with a larger agency, usually lack the funding to do so.

The UNDP (2005, p.2, p.6) notes the importance of participatory planning but that 'there is a serious lack of information about reconstruction flowing to communities which is having a material impact of their ability to recover' (ProVention/ALNAP, 2005a, p.6). Cash grants or loans to households to undertake their own rebuilding is regarded as an effective practice to facilitate greater choice and participation (Harvey, 2005; ProVention/ALNAP, 2005a, p.5). This should be linked, with appropriate professional and technical support, to commitments to meet appropriate building standards and be subject to audit, as following the Gujurat earthquake where a consultant was appointed to audit all houses built with World Bank loans for their conformity to earthquake-resistant standards. (ProVention/ALNAP, 2005a, p.6).

There are opportunities for professional bodies to work in partnership with national and local NGOs and research and academic institutions. There are, for example, many cases of architectural students working with local people in the reconstruction of their communities, for example after the tsunami in India, Thailand and elsewhere. The Housing Foundation in Iran notes that housing centres and architectural workshops set up after the Bam earthquake provided advice to people on managing reconstruction and accessing funding (ProVention/ALNAP, 2005b, p.6).

Land, planning and infrastructure issues in disasters and reconstruction

A more coherent and flexible framework for planning and managing reconstruction, supporting and making the best uses of local efforts and resources and targeted external inputs could achieve both speed and effectiveness.

However, it is clear that many of the delays in reconstruction and re-housing originate in factors outside the area of construction planning and management. Land and planning, in particular, are key issues.

There is a growing recognition that issues of land rights and land ownership need to be dealt with early on and that 'a common mistake is to start the construction of permanent houses on the understanding that securing tenure will follow automatically' (Barakat, 2003, p.9; ProVention/ALNAP, 2005a, p.5).

Williams notes that property rights in the region affected by the tsunami are complex and contentious: 'Tensions derive from increasing populations and fragmentation of prime land, rising prices of coastal land, jurisdictional ambiguity and official corruption. These tensions cause conflicts within families, between neighbours and amongst local users and non-local interlocutors such as investors' (Williams, 2005, p.7).

Land tenure can be based on rights provided by local norms or customs, on religious texts, or on formal state laws, with possible conflict between the latter, which is more individualistic and market-based, and the two former which tend to be more communal or concerned with the continuum between ancestors and their

Land titling and community land mapping and planning

Box 27

Where possible, land titles should be regularised, or a functional proxy for land titles provided. Where this is not possible, alternative means should be found to ensure that land is not seized outright or fraudulent claims honoured. Local government should help to control profiteering on land – external agencies have an advocacy role here in holding local government accountable. Community land mapping activities in Aceh after the tsunami have shown steady, though slow progress in facilitating community-driven adjunction of land-title issues… re:Act (rebuilding Aceh communities together) is a civil society collaboration led by the Urban and regional Development Institute and Indonesian Architects' Institute. Since April 2005 it has been helping various communities in Banda Aceh rebuild their homes. With community involved in decision-making, mapping land plots and dykes, village planning and physical construction.

ProVention/ALNAP, 2005a, p.5; AIRPD, 2005, Aceh reconstruction. http//www.urdi.org/urdi/index.php *Summary by MLC.*

successors. 'Many victims and survivors of the tsunami were subject to complex layers of changing land tenure systems introduced during feudal, colonial and independence phases of political and economic development' (Williams, 2005, p.10).

Deeds and titles are likely to have been rare in areas affected by the disaster. In Banda Aceh it is estimated that 75% of the land affected by the tsunami was unregistered (Williams, 2005, p.12). Where records have not been lost in the disaster, deeds to property that have been registered are often in names of people who have passed away. Additionally, public records had often been damaged or destroyed in areas affected by civil conflict (Williams, 2005, pp.12-13)

Loss of evidence of property represents a serious threat to the land rights of poor people and a challenge to agencies seeking to recover the property of the displaced. Other threats include displacement, where returning refugees find their houses occupied by others, and land grabs and expropriation.

Advocacy helps Thai village communities resist post-tsunami land grab Box 28

Of the 47 villages destroyed by the tsunami in the Andaman sea region of Thailand, at least 32 are now embroiled in serious land conflicts…. Because both local and national politicians have been partners in - or beneficiaries of – schemes to commercialize the Andaman coastline, the government's role in managing these public lands is deeply compromised by conflicts of interest. To these powerful interests, the tsunami has been like a prayer answered, since it literally wiped the coast clean of the last communities which stood in the way of their plans for resorts, hotels, golf courses and shrimp farms. As far as they're concerned, these ruined villages are now open land! Senator Chirmsak Pinthong, on a recent tour of tsunami-hit areas to investigate land rights, put it this way: 'The developers have tried before to chase people away. Now the tsunami has done the job for them.'

Under Thai law, squatters can apply for legal title to a plot of land after 10 years of continuous occupation. In practice, few succeed and millions of people around the country continue to live on what is technically public land in a kind of legal limbo, without papers, without clear rights. Speculators exploit this ambiguity by using various 'informal' means to get land purchase records back-dated or documents issued in their names, and then accusing villagers of encroaching. Battles over land title are common, particularly where tourist dollars are at stake.

… Land problems [of the fishing communities] have come out in a series of well-publicized meetings and large seminars organized by different ministries and civic groups in the aftermath of the tsunami. There is now more information, more discussion, more awareness of the needs of these fishing communities among all the groups involved in tsunami rehabilitation. All this public discussion has helped to slow down the land grabbing (and the eviction of traditional fishing villages) considerably.

ACHR, 2005 No. 16, August 2005, p.34. Summarised MLC.

Among the poor, groups that are particularly vulnerable to the immediate impacts, such as children and old people, are often also the most vulnerable to its aftermath in terms of their human rights. There is evidence to suggest that women were the main victims of the Indian Ocean tsunami. An Oxfam International report suggests 70-80% of those who died in Aceh, Sri Lanka and India were women. Women were more likely to have been at home when the wave struck, and efforts to save their children may have slowed their flight (Oxfam International 2005, ACHR 2005, p2). At the same time, surviving women in Aceh who moved into their husbands' villages after marriage and who were widowed by the disaster, were particularly vulnerable with regard to being able to restore their rights to property, as local traditions and power structures favour retention of property within the bloodline (Williams, 2005, p.39).

Large areas of land were physically lost to the tsunami or substantially degraded as a result of it. Around 150 km of the western coastline of Sumatra dropped by 1 metre according to FAO estimates. It is estimated that land submerged or made permanently uninhabitable was home to 120,000 people (Oxfam International, 2005, p.2).

Cash compensation may be inadequate for people to recover their property rights, whilst compulsory purchase of land for resettlement can have a huge knock-on effect. This form of acquisition is often accompanied by pressure to sell and is likely to drive up land prices and make access to land more difficult for non-beneficiaries of the re-housing schemes (Williams, 2005, pp.18-26).

Proposals for buffer zones have significantly delayed rebuilding in India, Indonesia and Sri Lanka (Oxfam International, 2005, p.2). This was particularly the case when the knee-jerk imposition of excessive and rigidly enforced setbacks immediately after the disaster were reconsidered in the light of their practicability and planning rules were then subject to a long period of uncertainty, becoming hedged with exceptions.

In Aceh, the government initially proposed a set-back zone of 2 km but the debate went on until March 2005 delaying plans for reconstruction. A number of exceptions to the rule are now in place that allow for the return of fishing communities and the required infrastructure, along with farming in the coastal area. The Government of India has spoken of implementing its existing Coastal Regulation Zone prohibiting new settlements within 500 m of the coast but the rule has been interpreted in different ways in different states in the past (Oxfam International, 2005, p.7). One of the consequences is that planning rules are ineffective unless they are enforced and the raft of exceptions from prohibitions can facilitate abuses in the form of rent-seeking for consents (Williams, 2005, p.13).

A further constraint in dealing with property rights and planning issues is the lack of capacity at the local level in government to deal with them. In some cases the weaknesses exist prior to the disaster, which obviously puts excessive demands on the authorities. In other cases, existing government and local government infrastructure has been seriously damaged by the disaster itself. Government institutions in Aceh were badly damaged by the tsunami along with the whole infrastructure of the province making planning for recovery very difficult for some months (Oxfam International, 2005, p.2). Similar conditions existed in northern Pakistan after the earthquake.

In almost any area hit by a major natural disaster, physical infrastructure including water and power, transport and communications can be hit hard. In Aceh major infrastructure was devastated and prior attention must obviously be given to restoring it before other reconstruction activities can take place. Critical infrastructure needs to be repaired or rebuilt at the same time as housing, or, as in the case of water, drainage and power supply, take priority over other reconstruction concerns. 'Housing and infrastructure development often account for up to 50% of recovery disbursements' and 'can provide services and access that will help poor people' in their recovery, although infrastructure reconstruction needs to be closely related to poverty reduction strategies. (ProVention/Alnap, 2005a, pp.5-7).

Conclusions and implications for the built environment professions

There is ample evidence to suggest that post-disaster reconstruction is a particular cause for concern and should be a focus of renewed attention by policy makers and professionals alike, particularly as the damage resulting from natural disasters looks set to increase. Strides have been made by the international community over recent decades in managing the emergency response to major natural disasters and understanding the need for risk reduction. Failures in co-ordination still occur, however, and the framework for managing post-disaster recovery during the relief phase, is generally far from adequate in its capacity to plan for long-term recovery and managing the transition to it.

The funding of recovery from disasters remains overly short-term in its focus stymieing efforts to plan for a smooth transition from humanitarian relief to long-term recovery. The concern for accountability is a major, if understandable constraint on improved early planning and management of the reconstruction process. In addition, it limits the potential for drawing more fully on smaller local organisations that are not in established partnerships with the agencies involved. If the management of disaster recovery is to go forward, co-ordination of effort requires a more flexible pool of funding, that can be allocated more appropriately and equitably between the early and later stages of recovery, and transferred between different types of recovery effort, or even between disasters, as the need arises.

Earlier assessment of the impacts of the disaster and better cost planning and control, with improved mechanisms for the monitoring of funding flows and expenditure are ways of greasing the wheels of recovery.

In post disaster conditions communications are often poor and information is a scarce resource, but more widespread and intelligent use could be made of community-led surveys and independent monitoring by local civil society organisation which, with appropriate professional support could fill in the gaps.

Technology has a role to play, but it needs to be used intelligently. New forms of telecommunication and the use of satellites, for example, are increasingly important in helping the recovery effort. The use of remotely-sensed satellite images and GIS is now an essential element of the planning and co-ordinating recovery and reconstruction.

MapAction : Mapping for Disaster Relief and Development Box 29

MapAction is a UK-based international charity working with the United Nations' Office for the Co-ordination of Humanitarian Affairs, the UK's Department for International Development and other governmental agencies. It specialises in the mapping of disaster areas and supplying geographical information for humanitarian relief operations. Using satellite imagery, GIS and Global Positioning Systems (GPS), it aims to produce instant, real-time maps of a disaster - such as an earthquake or flooding - and then provide the information to other NGOs and government agencies in the field. By continually updating the maps, expert volunteers working on the ground in the disaster area can relieve the burden on emergency workers in the crucial first hours and days of a humanitarian crisis so that they can get on with the job of saving lives and alleviating suffering more efficiently.

In addition to rapid onset disasters, MapAction also provides geographical mapping services for humanitarian and development programmes, such as health and food relief.). Its thirty-strong team of volunteers has so far deployed in Kosovo, Lesotho, Chad, Sri Lanka, Niger, Sudan, Pakistan and Tajikistan.

(Text adapted from first person to third person and edited).
http://www.mapaction.org

Helicopters, on the other hand can be something of a mixed blessing. They can certainly help in speeding up contact with and relief to stranded families and are often essential. However, there are many places where they cannot reach or land and more traditional forms of access are required. The main problem is that they are expensive and are something of a symbol of disaster-relief 'machismo', whether employed by foreign or local military units or by civilian agencies. Given that recovery funding tends to be front-loaded and short-term and mostly spent on logistics, this encourages a wasteful use of resources. More intelligent logistical planning making better use of local knowledge could release resources for reconstruction.

There is evidence that, despite their commitments, agencies are failing to engage fully with the communities hit by the disaster, or to consider fully the implications of their interventions for local economic and institutional sustainability. Central planning and co-ordination needs to be backed by mechanisms that allow funds to flow more freely down to the local level where there is better knowledge of how they can be used to meet the immediate and long-term needs of communities.

Local NGOs and community-based organisations already play a key role in recovery but this role could be enhanced, and greater use made of the largely untapped or unmanaged efforts of the disaster victims themselves. More attention needs to be given to restoring and improving local capacity, particularly the professional capacity within local government.

Microfinance, social funds, compensatory and cash transfer payments all have an important role to play in allowing greater choice and ensuring that financial inputs respond to real need. If properly managed, and alongside cash for work programmes, they can ensure the recovery effort does not have a negative impact on local markets and economic institutions but rather contributes to sustainable economic recovery, income generation and restoration of livelihoods.

Along with the better use of local human resources, reconstruction should maximize the use of locally-sourced materials, including in particular recycling the debris of the disaster. At the same time, the procurement process has to be cautiously and carefully managed, to avoid pushing up prices and the exploitation of the situation by unscrupulous contractors and suppliers.

The planning and reconstruction of accommodation for those made homeless is a difficult and complex task and our research shows that the time required to do it effectively should not be underestimated. The pressures of meeting urgent requirements for temporary, transitional and permanent forms of shelter produce solutions that are frequently sub-optimal at every stage.

The approach to building shelter needs to be very flexible, allowing for proper consultation and community participation. It should recognise that temporary can often be a very long time and should cater for the needs of particular groups and cultural mores, and employing technologies that draw as fully as possible on local resources. Wherever necessary, it should draw on outside expertise, technology and materials strategically to speed up the process and ensure that new buildings are safe and to high standards.

At a time when they are at their most vulnerable and often suffering from post-disaster trauma, people are housed in unsatisfactory transitional accommodation often with complete uncertainty and to where and if they will finally be permanently accommodated. Sometimes, as currently in Pakistan, there is pressure for them to leave 'tent cities' without a proper plan for their permanent re-accommodation.

Often, people prefer to remain close to the ruins of the old home for fear of losing their property to land grabs by speculators, government appropriation or exclusion through new planning regulations, or occupation by other refugees. Where they are scattered this can make catering for their immediate needs and planning for the long-term rehabilitation more difficult. Establishing and restoring property rights can be a major brake on reconstruction, and there is a huge demand for professional support in this area.

LRRD – linking relief, rehabilitation and development – is being seen as an increasingly important element of international development policy, alongside mainstreaming disaster risk reduction (ProVention/ALNAP, 2005b, pp. 8-9). For many reasons, disasters and development are inextricably linked and disaster recovery represents an important opportunity for making things better than they were before – for 'reconstruction-plus' (Oxfam, 2006, p1).

Adherence to agreed international standards such as the Sphere standards; (see Appendix 5) greater involvement of communities in deciding, planning and building their own future and assessing, managing and monitoring their assets; and more intelligent and strategic use of professional and technical support at the local level are all key factors in ensuring that the development opportunities of disasters are fulfilled.

Within and beyond the recovery effort, there is a huge demand for building the capacity of local government and civil society to plan for and mitigate the risks of natural disasters in vulnerable zones. Building codes and planning regulations governing the design, location and layout of buildings and settlements have to be in place and enforced. Popular knowledge of what to do in the case of disaster needs to be established through the media, education and the training of key intermediaries and actors at the local level. Good practice needs to be become embedded in the local culture while expert knowledge of good practice should be stored, reproduced and shared between international, regional and local research and training institutions.

Within all of this, and at every stage, the surveying profession has invaluable expertise and a key role to play. Table 3 sets out the areas where intervention by property and construction professionals can lend support to the disaster management process and help overcome the gap between relief and recovery.

Surveyors offer a wide range of relevant skills and technical expertise, but the conditions of operating in post-disaster situations, particularly in poor countries, requires that they are flexible and imaginative in their attitude and approach.

Recovery, above all, is a collaborative effort in which skills and resources have to be used and adapted, as and where required. Working with communities, particularly those that are traumatised by the disaster and the personal impacts on their lives needs special skills and care. Working in multi-disciplinary teams and with local partners and intermediaries is essential. This kind of activity requires a special and new set of professional skills that need to be shared across all the built environment professions.

Box 30

Where property and construction skills can add value to disaster management and recovery

- Assessing disaster-related damage
- Land surveying, GIS and rapid mapping of disaster impacts and risks
- Monitoring funding
- Valuation, cost planning and spending priorities; development finance
- Procurement and project management
- Sourcing construction materials and equipment
- Building quality audits pre- and post-disaster, particularly resistance to disaster risks
- Aiding logistical planning
- Aiding local government land administration, cadastral mapping
- Knowledge of land and property legislation, providing support on land rights and claims
- Knowledge of local regulatory frameworks and ways they could be improved
- Training and knowledge transfer
- Disaster risk assessment
- Links with other built environment professions; inter-disciplinary and team working
- Contacts with local business and industry; networking
- Knowledge of appropriate forms of disaster-resistant construction and engineering.

Table 3 From relief to reconstruction: the added value of inputs from property and construction professionals

Activities			Key actors/clients:
Phase 1: Relief	Plan recovery effort and logistical planning		UN/IFIs/Government/relief agencies/military/civil defence
	Initial estimation of damage and needs assessment of survivors		UN/IFIs/relief agencies/military/ civil defence
	Rapid mapping of affected areas using remote sensing & GIS		Relief agencies/military/civil defence
	Establish information centres		Communities/local NGOs/UN
	Procure and supply emergency shelter		Relief agencies/military/civil defence//private contractors
Phases 2: Transition	Support community surveys and mapping exercises		Communities/local NGOs
	Housing needs assessment and establish baseline and eligibility		UN/IFIs/Government/relief agencies Communities/local NGOs
	Plan and construct transitional shelter/repair lightly damaged property; project planning and contract management		Households/communities/property owners/local NGOs/relief agencies/Government
	Phase 3: Reconstruction period	Re-establish damaged major infrastructure (road, water, sanitation)	Relief agencies/military/ civil defence/private contractors
		Assist in establishing property rights and claims and moderate conflicts	Households/communities/ property owners/local governments/ local NGOs/relief agencies
		Assistance and assessment of compensation claims	Households/Government/ local NGOs/consultants/ insurance companies
		Identify, survey and procure safe land for new housing	Households/communities/ property owners/local governments/ local NGOs/relief agencies
		Advise on land boundary issues/surveys for cadastral proposes	Local government/ Government/property owners
		Advise on new and revised building codes/ land planning regulations	Local government/Government
		Detailed assessment of damage to housing; project planning	Households/communities/ property owners/local governments/ local NGOs/relief agencies
		Source and procure essential building materials/skilled labour	Relief agencies/military/ civil defence/private contractors/communities/local NGOs
		Provide expertise for safe, rapid, sustainable and appropriate building construction	Households/communities/property owners/local governments/local NGOs/relief agencies/Government
		Conduct training on safe/sustainable construction methods	Households/communities/ property owners/local governments/ local NGOs/relief agencies/ Government
		Financial planning and management; development finance advice; project management	Government/local government/ relief agencies/communities/ local NGOs/contractors
		Plan and rebuild damaged and destroyed homes	Relief agencies/contractors/communities/ Government/local NGOs

Source: *Max Lock Centre, Table 3 Main Report.*

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Appendix 1: List of Abbreviations

ACHR	Asian Coalition for Housing Rights
ACT	Action by Churches Together
ADB	Asian Development Bank
AIRPD	Australia Indonesia Partnership for Reconstruction and Development
ALNAP	Active Learning Network on Accountability and Performance in Humanitarian Assistance
BBC	British Broadcasting Corporation
BRR	Aceh and Nias Rehabilitation and Reconstruction Agency
CAM	Community Asset Management
CAP	Consolidated Appeal Process
CARE	Cooperative for Assistance and Relief Everywhere
CDA	Capital Development Authority
CD-ROM	Compact Disc Read-only memory
CEPAL	Comisión Económica para América Latina y el Caribe
CIOB	Chartered Institute of Building
CRED	Center for Research on the Epidemiology of Disasters
CWS	Church World Service
DEC	Disasters Emergency Committee
DFID	Department for International Development
ECOSOC	Economic and Social Council
EM-DAT	Emergency Disasters Data Base
ERRA	Earthquake and Reconstruction and Rehabilitation Authority
FAO	Food and Agriculture Organisation
GAM	Gerakan Aceh Merdeka (Free Aceh Movement)
GDP	Gross Domestic Product
GIS	Geographic Information System
IDNDR	International Decade for Natural Disaster Reduction
IDPs	Internally Displaced People
IFIs	International Finance Institutions
IFRC	International Federation of Red Cross and Red Crescent Societies
IRIN	Integrated Regional Information Network
ISDR	International Strategy for Disaster Reduction
LRRD	Linking Relief, Rehabilitation and Development
MAP	Mangrove Action Project

MLC	Max Lock Centre
MP	Member of Parliament
NatCat	Natural Catastrophes
NGO	Non-Governmental Organisation
NOAA	National Oceanic and Atmospheric Administration
OCHA	Office for the Coordination of Humanitarian Affairs
ODG	Overseas Development Group
RCRC	Red Cross and Red Crescent
RICS	Royal Institution of Chartered Surveyors
RSS	Really Simple Syndication
SIF	Social Investment Fund
TRN	Tsunami Recovery Network
UK	United Kingdom
UN	United Nations
UNCRD	United Nations Centre for Regional Development
UNDAW	Division for the Advancement of Women
UNDMTP	United Nations Disaster Management Training Programme
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNESCWA	United Nations Economic and Social Commission for Western Asia
UNESD	United Nations Economic and Social Development
UNGA	United Nations General Assembly
UNHC	UN High Commissioner
UNICEF	United Nations Children's Fund
US	United States
WHO	World Health Organisation

Appendix 2: Tsunami Recovery Network member organisations

1 iResearch
2 Architecture & Developpement
3 Architecture Sans Frontières International
4 Asian Coalition of Housing Rights (ACHR)
5 Assai
6 ATS
7 Bombay Urban Industrial League for Development
8 BuildAid
9 Building and Social Housing Foundation (BSHF)
10 CADME (Coastal Area Disaster Mitigation Efforts)
11 Citizens Alliance for Sustainable Living
12 CMRC - Islamic Foundation of Toronto
13 Commonwealth Association of Architects (CAA)
14 Commonwealth Association of Planners (CAP)
15 Commonwealth Housing Trust
16 D3o: Thailand
17 Department of Gender studies, University of Hull
18 Design Studio 'To The Sea' The Netherlands Institute of Spatial Research
19 Deva Organisation Rural Development Society
20 Development Planning Unit (DPU), University College London
21 Development Workshop
22 Disaster Mitigation Institute
23 Dutch Habitat Platform
24 Engineering Without Frontiers
25 Engineers Against Poverty
26 Geoffrey Payne and Associates
27 GHK International
28 Global Urban Research Unit (GURU), University of Newcastle upon Tyne
29 Habitech Center - Asian Institute of Technology
30 Help the Hospices
31 Homeless International
32 Hydro Systems International
33 Ian Haywood Partnership

34 ID21, Institute of Development Studies
35 Indonesian Technological Institute
36 Indonesia Relief
37 Institute for Housing and Urban Development Studies (IHS), Rotterdam
38 Institute for International Development (IID)
39 Institution of Civil Engineers (ICE)
40 International Dalit Social Action Forum
41 Intermediate Technology Development Group (ITDG)
42 International Institute for Environment and Development (IIED)
43 International Labour Office (ILO)
44 International Projects Office (IPO), University of Westminster
45 Island Aid
46 Isocarp International Society of City and Regional Planners
47 Kon Thai Ti Jai
48 Area de Ciencias Geográficas, Universidad de La Serena
49 Levitt Bernstein
50 London South Bank University
51 organisations
52 Master PVS, Dipartimento di Pianificazione, Università IUAV di Venezia
53 Max Lock Centre Delhi
54 Max Lock Centre, University of Westminster
55 N-AERUS
56 Omni Marine Co.Ltd
57 Oxford Brookes University, School of Planning
58 Plan International
59 Post Graduate Centre Human Settlements, University of Leuven, Belgium
60 Prakasam Zilla Poura Viniyogadarula Samkshema Sangam
61 Psikodista Foundation
62 Royal Institute of British Architects (RIBA)
63 Royal Institution of Chartered Surveyors (RICS)
64 Royal Town Planning Institute (RTPI)
65 School of City & Regional Planning, Cardiff University
66 SPRING, Universität Dortmund, Germany
67 Strategic & Integrated Develoment Services
68 Thaitogether
69 Theis and Khan Architects
70 TRADA
71 Triple Line Consulting

72 Tsunami Disaster Intl. Syndicate
73 Reconstruction team of Tsunami damaged Siri Rahul Preschool
74 Vedika
75 Water Engineering Development Centre (WEDC)
76 World Bank South Asia
77 World Council for Renewable Energy Asia (WCRE)
78 WSP International Management Consulting
79 YF Consult
80 YUVA

Appendix 3: RICS President's Commission on Major Disaster Management

Chairman

Dr David Owen PhD MSc FRICS
Allen Owen Ltd

Members

Professor P S Brandon DSc MSc FRICS
Director of Strategic Programmes, School of Construction & Property Management
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Max Crofts BSc FRICS
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Steve Williams FRICS MAI
President, RICS

Appendix 4: Estimates of the physical and economic impacts of the Indian Ocean tsunami and status of reconstruction

A Housing affected by the tsunami

Country	homes destroyed	no of homeless	new permanent houses	houses still to be built
Indonesia, Sri Lanka, India, Thailand, Maldives, other countries	400,000 (UN), 720,000 (ACHR)	2,000,000 (TRN), 2.5 million (ACHR)		
Indonesia (Aceh Tsunami and Nias Earthquake)	78,000 (UN), More than 100,000 (UNDP), 280,000 (Tsunami) (ACHR)	600,000 (Tsunami) and 70,000 (Nias earthquake) (UN), 572,926 (UNDP), 595,000 (Tsunami) (TRN), 532,898 (Tsunami) (EM-DAT CRED), 547,509 (Tsunami) (ACHR)	16,200 (UN)	16,000 (UN)
Sri Lanka	98,000 (UN), 98,000 (32,000 in buffer zone, 23,028 fully damaged and 32,497 partially damaged outside the zone) (GoSriLanka), 480,000 (EM-DAT CRED), 195,600 (ACHR)	516,159 (UN), 516,150 (UNDP), 516,150 (GoSriLanka), 500,668 (TRN), 480,000 (EM-DAT CRED), 1 million (ACHR)	54,000 (UN), 4,299 (29,649 planed in which still 10,707 under construction) (GoSriLanka)	100,000 (UN), 68,351 (GoSriLanka)
Maldives	8,094 (5,215 destroyed and 2,879 damaged) (UN), 6,000 damaged (UNDP)	5,215 (UN), 11,231 (UNDP), 20,500 (TRN), 13,000 (EM-DAT CRED)	805 (UN)	4,410 (UN)
India	68,609 (UN), 235,000 (TRN), 239,024 (ACHR)	647,556 (TRN), 1 million (ACHR)		
Thailand	5,000 (UN), 4,800 (UNDP), 3,676 (ACHR)	6,000 (UNDP)		
Malaysia	8,000 (UN)	4,296 (EM-DAT CRED)		
Myanmar	2,592 (TRN), 539 (ACHR)	3,200 (EM-DAT CRED), 2,145 (ACHR)		
Seychelles		950 (UN), 70 (EM-DAT CRED)		
Somalia	2,000 (UN)	4,000 (TRN)		

B Damages and funds for tsunami recovery

Country	Cost of damages	Funds pledges	Funds committed	Funds spent
Indonesia, Sri Lanka, India, Thailand, Maldives, other countries	$US 10 billion (UN), $US 11 billion (TRN)	$US 13 billion (UN), $US 7.34 billion (government) and $US 12 billion (all includes private donations) (AlertNet), $US 8.5 billion (TRN)	$US 7.34 billion (governments), $US 12 billion (all includes private donations) (AlertNet), $US 8.5 billion (TRN)	$US 6.86 billion (governments) (AlertNet), $US 2 billion (TRN)
Indonesia (Aceh Tsunami and Nias Earthquake)	$US 4.5 billion (Tsunami) and $US 400 million (Nias) (UN), $US 5 billion (Tsunami) (UNDP), $US 4.3 billion (TRN), $US 4.45 billion (EM-DAT CRED)	$US 6.1 billion (UN), $US 4.6 billion (TRN)	$US 4.4 billion (UN)	
Sri Lanka	$US 1.6 billion (UN), $US 2.15 billion (UNDP), $US 2.2 billion (GoSriLanka), $US 1.6 billion (TRN), $US 1.316 billion (EM-DAT CRED)	$US 2.8 billion (UN), $US 2.8 billion (GoSriLanka), $US 2.1 billion (TRN)	$US 2.1 billion (UN), $US 2.1 billion (GoSriLanka)	$US 600 million (UN), $US 600 million (GoSriLanka)
Maldives	$US 470 million (UN), $US 470 million (UNDP), $US 470 million (TRN), $US 470 million (EM-DAT CRED)	$US 320 million (UN), $US 375 million (TRN)	$US 260 million (TRN)	$US 84.6 million (TRN)
India	$US 2.56 billion (UN), $US 3 billion (TRN), $US 1,02 billion (EM-DAT CRED)	$US 2.18 billion (UN), $US 2.175 billion (TRN)		
Thailand	$US 2.2 billion (UN), $US 1.6 billion (UNDP), $US 405 million (EM-DAT CRED)	$US 2.19 billion (UN)		$US 23.9 million (TRN)
Malaysia	$US 14 million (EM-DAT CRED)			
Myanmar				$US 1.4 million (TRN)
Seychelles	$US 30 million (EM-DAT CRED)			
Somalia				$US 7.9 million (TRN)

C Data on livelihoods, boats, schools, roads and others

Country	Livelihoods	Boats	Schools	Roads	Others
Indonesia, Sri Lanka, India, Thailand, Maldives, other countries	1.4 million people lost their livelihoods (UN), 420,000 households of fisheries affected (ACHR)	118,000 fishing boats destroyed (UN), 175,000 fishing boats destroyed (ACHR)		More than 3000 miles of roads damaged (UN)	
Indonesia	120,000 received short term cash-for-work programme. 2/3 of farm population has returned (UN); 150,000 fishermen lost their job. Jobless is now 35% in the province (ACHR)	32,000 fishing boats repaired and replaced (4,400 new boats delivered, 1,500 under construction) (UN); 80,000 fishing boats destroyed (ACHR)	2,000 schools damaged (UN)	10,000 km of road destroyed (ACHR)	122 hospitals and health centres damaged. 38 hospitals restored, 51 hospitals under construction (UN); 91 wholesale and village fish markets, 7 bus terminals, 28,000 ha irrigation and 1000km canal destroyed (ACHR)
Sri Lanka	150,000 people lost their livelihoods (50% fisheries, 4/5 % agriculture, 45% tourism), Livelihood recovered of up to 70-85% of families (UN); 150,000 people lost incomes (50% fisheries). 70-85% people have regained their income. 8,000 people lost their agricultural livelihoods. 250,000 households have received cash grants. 52 hotels damaged, 41 hotels restored (GoSriLanka); 100,000 fishermen lost jobs. 275,000 unemployed (ACHR)	54,100 fishermen affected. 43,700 boats and engines have been provided (UN); 16,919 fishing boats destroyed or damaged (75% of total fleets) (UNDP); 75% fishing boats destroyed. 16,919 boats destroyed and 7,266 boats damaged, 90% boat destroyed have been repaired. 12,393 boats replaced, 9,263 boats repaired (GoSriLanka); 15,300 fishing boats destroyed (ACHR)	182 schools, 4 universities and 15 vocational training centres damaged (GoSriLanka)	1050 km national roads, 1180 km provincial roads and 400 km local roads damaged (GoSriLanka); 1,600 km of roads destroyed (ACHR)	97 health institution buildings damaged. 23,440 acres salinated agricultural land. 53 hotels damaged, 42 hotels now open (GoSriLanka); 73 hospitals, 363 clinics, 182 schools, markets, transport terminals, 50,000 wells and 160 km rail track destroyed (ACHR)

C Continues overleaf

C Data on livelihoods, boats, schools, roads and others. (Continued)

Country	Livelihoods	Boats	Schools	Roads	Others
Maldives	11,000 people lost incomes (UNDP)	170 fishing boats damaged (UN)	105 schools damaged. 20 schools and 21 pre-schools rehabilitated and reconstructed (UN)		Agriculture lands salted. Harbours, jetties and sea walls damaged (UN)
India	39,035 ha agriculture lands damaged, 31,755 livestock killed (UN); 8,036 farmers lost work in Nagapattinam District (ACHR)	More than 80,000 destroyed and damaged (UN); 74,025 fishing boats damaged or destroyed (ACHR)	360 schools damaged (UN)		80 hospitals and health centres destroyed (UN); 15,000 ha farmland salinized (ACHR)
Thailand	Tourism revenue lost $US 1.4 billion (UN); $US 47.2 million fishing capacity damaged, $US 47.8 million agriculture damaged. 120,000 people lost jobs in tourism (TRN); 120,000 people's livelihoods affected (ACHR)	6,000 boats damaged or lost (UN); 5,000 boats damaged or lost (UNDP); 5,467 fishing boats damaged (TRN); 3,307 fishing boats destroyed (ACHR)			Tourism facility (315 hotels and 234 restaurants) destroyed (ACHR)
Seychelles		1,500 fishermen affected (UN)			
Myanmar	10,000 – 15,000 people's livelihoods affected (TRN); 15,000 people lost jobs (ACHR)	126 fishing boats destroyed (ACHR)			

Sources: *UN, 2005. UN Office of the Secretary-General's Special Envoy for Tsunami Recovery, 22/12/05*
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Appendix 5: Sphere Project Standards

The Sphere Project was launched in 1997 by a group of humanitarian NGOs and the Red Cross and Red Crescent (TRN, 2005; Sphere Project, 2004). The minimum standards set by the Sphere Project, guiding humanitarian response to disasters are as follows:

Participation

- All people receive information on assistance and the opportunity to comment on it
- Written plans and objectives reflect the needs, concerns and values of disaster-affected people, including vulnerable groups
- Programming is designed to maximise the use of local labour and skills.

Initial assessment

- Information gathering is standardised, allows for input on the part of disaster-affected people, and considers all sectors, including local and government capacities and responsibilities
- Whenever possible, data is disaggregated by gender and age and externally validated and cross-checked
- Assessment includes the operating environment, including personnel safety, in which local people and humanitarian workers must work
- Assessment findings are made available as widely as possible.

Response

- Preservation of life is prioritised over other requirements
- Interventions are designed to promote the livelihoods of the affected population
- The activities of humanitarian agencies are effectively coordinated and information exchange is promoted, while agencies work to ensure that gaps in their own capacity are highlighted so that others might assist.

Targeting

- Targeting criteria must be based on vulnerability and clearly defined, with priorities agreed by the affected population
- Targeting mechanisms should not undermine the dignity and security of individuals or increase vulnerability to exploitation
- Distribution systems are effectively monitored to ensure targeting priorities are met.

Monitoring

- Information collected for monitoring must be timely, useful, accurate, transparent and systematic
- Women, men and children from affected area are involved and consulted regularly
- Systems are in place to ensure that monitoring information is disseminated amongst humanitarian agencies, affected populations, local authorities and other actors, as needed.

Evaluation

- Programmes are evaluated against stated objectives and agreed standards, measuring appropriateness, efficiency, coverage, coherence and impact on affected populations
- Evaluations take account of the views of affected and host populations
- Information collection is impartial and independent
- Evaluation results are used to improve future practice.

Aid worker competencies and responsibilities

- Humanitarian workers are technically competent, possess appropriate experience and are familiar with humanitarian principles
- Workers are knowledgeable about local conditions, including potential tensions and sources of conflict

- Workers are able to recognise abusive, discriminatory and illegal activities and refrain from engaging in them.

Supervision, management and support of personnel

- Managers are accountable for their decisions and for ensuring adequate safety precautions and compliance with relevant regulations and codes of conduct
- Technical and management staff receive appropriate training and support
- Staff understand programme objectives and methods, receive appropriate monitoring and feedback on their performance, and have clear, written job descriptions and understand lines of authority
- Staff understand relevant health and safety practice and receive appropriate security training
- The capacity of national and local authorities is enhanced with a view to improving long-term sustainability.

Appendix 6: Summary definitions of the OECD DAC criteria

Criterion	Definition	Main Use*
Relevance/ Appropriateness	Relevance is concerned with assessing whether the project is in line with local needs and priorities (as well as donor policy). Appropriateness is the tailoring of humanitarian activities to local needs, increasing ownership, accountability and cost-effectiveness accordingly.	*All evaluation types except those with a mainly institutional focus.*
Connectedness	Connectedness refers to the need to ensure that activities of a short-term emergency nature are carried out in a context that takes longer-term and interconnected problems into account.	*Evaluations assessing institutional structures and partnerships.*
Coherence	The need to assess security, developmental, trade and military policies as well as humanitarian policies, to ensure that there is consistency and, in particular, that all policies take into account humanitarian and human-rights considerations.	*Joint evaluations, large-scale evaluations and those with a focus on policy.*
Coverage	The need to reach major population groups facing life-threatening suffering wherever they are.	*All evaluation types except those with a mainly institutional focus.*
Efficiency	Efficiency measures the outputs – qualitative and quantitative – achieved as a result of inputs. This generally requires comparing alternative approaches to achieving an output, to see whether the most efficient approach has been used.	*All evaluation types where adequate financial information is available.*
Effectiveness	Effectiveness measures the extent to which an activity achieves its purpose, or whether this can be expected to happen on the basis of the outputs. Implicit within the criterion of effectiveness is timeliness.	*Single-sector or single-agency evaluations.*
Impact	Impact looks at the wider effects of the project – social, economic, technical, environmental – on individuals, gender and age groups, communities and institutions. Impacts can be intended and unintended, positive and negative, macro (sector) and micro (household).	*Multi-sector, multi-agency evaluations; joint evaluations; sector-wide evaluations.*

Source: *ALNAP, 2006. Evaluating humanitarian action using the OECD-DAC criteria. An ALNAP guide for humanitarian agencies, pp. 20-21.* http://www.odi.org.uk/alnap/pubs/pdfs/eha_2006.pdf

*All of the criteria will be useful in most evaluations to some extent. This column selects evaluation types where each criterion will be particularly useful. For further details on the types of evaluations noted in the third column, see ALNAP Training Module 1 (at http://www.alnap.org/training.html).

Appendix 7: Millennium Development Goals and Targets

Millennium Development Goals and Targets
Goal 1: Eradicate extreme poverty and hunger
Targets: • Reduce by half the proportion of people living on less than a dollar a day • Reduce by half the proportion of people who suffer from hunger
Goal 2: Achieve universal primary education
Targets: • Ensure that all boys and girls complete a full course of primary schooling
Goal 3: Promote gender equality and empower women
Targets: • Eliminate gender disparity in primary and secondary education preferably by 2005, and at all levels by 2015
Goal 4: Reduce child mortality
Targets: • Reduce by two thirds the mortality rate among children under five
Goal 5: Improve maternal health
Targets: • Reduce by three quarters the maternal mortality ratio
Goal 6: Combat HIV/AIDS, malaria and other diseases
Targets: • Halt and begin to reverse the spread of HIV/AIDS • Halt and begin to reverse the incidence of malaria and other major diseases
Goal 7: Ensure environmental sustainability
Targets: • Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources • Reduce by half the proportion of people without sustainable access to safe drinking water • Achieve significant improvement in lives of at least 100 million slum dwellers, by 2020
Goal 8: Develop a global partnership for development
Targets: • Develop further an open trading and financial system that is rule-based, predictable and non-discriminatory, includes a commitment to good governance, development and poverty reduction nationally and internationally • Address the least developed countries' special needs. This includes tariff- and quota-free access for their exports; enhanced debt relief for heavily indebted poor countries; cancellation of official bilateral debt; and more generous official development assistance for countries committed to poverty reduction • Address the special needs of landlocked and small island developing States • Deal comprehensively with developing countries' debt problems through national and international measures to make debt sustainable in the long term • In cooperation with the developing countries, develop decent and productive work for youth • In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries • In cooperation with the private sector, make available the benefits of new technologies especially information and communications technologies

(Note: All targets for 2015 unless otherwise noted).

Source: *UN, 2000. Millenium Development Goals. New York: United Nations.*
http://www.un.org/millenniumgoals/goals.html

Appendix 8: Organisations involved with disaster recovery

	Organisations, Resources and Events	Note
	UN Organisations	
1.	**Central Register** OCHA	A Central Register of Disaster Management Capacities. http://ocha.unog.ch/cr/
2.	**CMCS** (former-MCDU) - Civil Military Coordination Section	Aims for the most efficient use of military and civil defence assets in support of humanitarian operations. http://ochaonline.un.org/webpage.asp?Page=665
3.	**DESC** Division for ECOSOC Support and Coordination	Provides substantive support to the Economic and Social Council. http://www.un.org/esa/coordination/desc.htm
4.	**Emergency Telecomunications, WGET** (the Working Group on Emergency Telecommunications), **IASC-RGT** (IASC Reference Group on Telecommunications) and **CDC** (the Conference on Disaster Communications)	Focuses on Telecommunications in the Service of Humanitarian Assistance as part of OCHA. http://www.reliefweb.int/telecoms/
5.	**GLIDEnumber** – Global IDEntifier Number	Addresses issues of scattered data, more efficient data searching and data accuracy in disaster management. http://gs.adrc.or.jp/glide/public/about.jsp
6.	**HIC HumanitarianInfo.org** - Humanitarian Information Centres (HIC) and Partners	Supports the co-ordination of humanitarian assistance through the provision of information products and services, and the decision-making process. http://www.humanitarianinfo.org/
7.	**IASC** Early Recovery Cluster - Inter-Agency Standing Committee	Strengthens leadership and accountability in nine key "clusters" of the humanitarian response. http://www.undp.org/bcpr/disred/english/earlyrecovery/earlyrecovery.htm
8.	**IATF** Inter-Agency Task Force for Disaster Reduction (of ISDR)	Concentrates on raising political awareness, assisting regional networks and stepping up scientific research. http://www.unisdr.org/eng/task%20force/tf-meeting-9th-eng.htm
9.	**IDD** – Inter-Agency Internal Displacement Division	Undertakes a number of initiatives to improve the international response to address the needs of the Internally Displaced. http://www.reliefweb.int/idp/about/index.htm
10.	**IFAD** International Fund for Agricultural Development	Assists the rural poor with long-term disaster recovery in rural areas. http://www.ifad.org/
11.	**ILO** International Labour Organization	Promotes decent work and social safety nets by setting and supervising international labour standards. http://www.ilo.org/
12.	**INSARAG** - International Search and Rescue Advisory Group	A global network which deals with urban search and rescue (USAR) related issues as part of OCHA. http://ochaonline.un.org/webpage.asp?Page=549
13.	**ISDR** International Strategy for Disaster Reduction	A disaster information and management system within the UN and the focal point to promote links and synergies. http://www.unisdr.org/
14.	**ITU** International Telecommunication Union	International organisation within which governments and the private sector coordinate global telecom networks and services. http://www.itu.int/home/index.html
15.	**OCHA** United Nations Office for the Coordination of Humanitarian Affairs	Coordinates humanitarian response, policy development and humanitarian advocacy in disaster relief and preparedness. http://ochaonline.un.org/

Appendix 8 continues overleaf

Appendix 8 continued

	Organisations, Resources and Events	Note
	UN Organisations	
16.	ProVention Consortium	A global coalition to increasing the safety of vulnerable communities and to reducing the impact of disasters in developing countries. http://www.proventionconsortium.org/
17.	RELIEFWEB	The global hub for time-critical humanitarian information on Complex Emergencies and Natural Disasters. http://www.reliefweb.int/rw/dbc.nsf/doc100?OpenForm
18.	UN Development Programme - Disaster Management, Disaster Management Programme; and Sustainable Energy and Environment Division	Disaster Reduction unit, part of Bureau for Crisis Prevention and Recovery that includes Natural Disaster Reduction. http://www.undp.org/erd/disaster.htm, http://www.undp.org/erd/dmp.htm, http://www.undp.org/seed, http://www.undp.org/drylands/
19.	UN Educational, Scientific and Cultural Organization - Unit for Natural Disaster Reduction	Focuses on prevention strategy by actively participating in the aid to those affected by disasters. http://www.unesco.org/environment http://www.unesco.org/tsunami
20.	UN Environment Programme – DEWA, GRID, APELL	Focuses on providing leadership and encouraging partnership in caring for the environment.It has three divisions which relates to disaster management: The Division for Early Warning and Assessment (DEWA) provides the world community with improved access to meaningful environmental data and information (http://www.unep.org/dewa/) The Global Resource Information Database (GRID) consists of a network of cooperating centres dedicated to making environmental data and information more readily accessible to environmental analysts. (http://www.unep.org/newdraft/unep/eia/ein/grid/home.htm) Awareness and Preparedness for Emergencies at the Local Level (APELL) minimises the occurrence and harmful effects of technological accidents and environmental emergencies. (http://www.uneptie.org/pc/apell/home.html). http://www.unep.org
21.	UN Food and Agriculture Organization - Global Inform. and Early Warning System, and Geoweb	Focuses on emergencies to protect, restore, enhance as a result of any number of natural causes, or be human-induced in the developing world. http://www.fao.org/reliefoperations/index_en.asp http://www.fao.org/giews/default.htm, http://geoweb.fao.org
22.	UN High Commissioner for Human Rights	Acts as representative of the Secretary-General on the human rights of internally displaced persons on natural disasters and internal displacement. http://www.unhchr.ch http://www.ohchr.org/english/issues/idp/infocus.htm
23.	UNCRD United Nations Centre for Regional Development	Conducts research and training in local and regional development targeting developing and transitional economies. http://www.uncrd.or.jp/
24.	UNDAC - the United Nations Assessment and Coordination Team	A stand-by team of professionals to carry out rapid assessment of priority needs to coordinate international relief on-site as part of OCHA. http://ochaonline.un.org/webpage.asp?Page=552
25.	UNDAW Division for the Advancement of Women	Advocates the improvement of the status of women of the world and the achievement of their equality with men as part of UNDESA. http://www.un.org/womenwatch/daw/
26.	UNDESA United Nations Department of Economic and Social Affairs	A vital interface between global policies in the economic, social and environmental spheres and national action. http://www.un.org/esa/desa/
27.	UNDMTP United Nations Disaster Management Training Programme	Addresses crises, emergencies and disasters for the UN Member States, the UN System and international and non-governmental organisations. http://www.undmtp.org/

Appendix 8 continued

	Organisations, Resources and Events	Note
	UN Organisations	
28.	UNGA - United Nations General Assembly	Serves as a forum for members to discuss issues of international law and make decisions on the functioning of the organization. http://www.un.org/ga/60/
29.	UN-Habitat – United Nations Human Settlements Programme – Risk and Disaster Management Programme	Co-ordinates activities in the field of shelter and sustainable human settlements development. http://www.unhabitat.org/programmes/rdmu/
30.	UNICEF	Focuses on health, education, equality and protection of children. http://www.unicef.org
31.	UNITAR United Nations Institute for Training and Research	Conducts trainings in Disaster and Management http://www.unitar.org/
32.	UNOPS United Nations Office for Project Services	Provides operational management, contracting and procurement services for the United Nations system. http://www.unops.org/unops/
33.	UNU United Nations University	Non-traditional, international educational institution, carrying out scholarly work to help resolve pressing global problems. http://www.unu.edu/
34.	Virtual OSOCC	Facilitates decision-making for international response to major disasters though real-time information exchange as part of OCHA. http://ocha.unog.ch/virtualosocc/(ffebri554kv3n345zutc2p45)/VOLogin.aspx
35.	WCDR World Conference on Disaster Reduction, 18-22 January 2005, Kobe, Hyogo, Japan	The Conference focuses on progress in disaster risk reduction accomplished since the Yokohama Conference of 1994. http://www.unisdr.org/wcdr/
36.	WMO World Meteorological Organization	Focuses on Natural Disaster Prevention and Mitigation (DPM) especially in developing countries. http://www.wmo.ch
37.	World Bank Group	The Disaster Management Facility (DMF) of the World Bank provides proactive leadership in disaster prevention and mitigation measures http://www.worldbank.org
38.	World Food Programme	Focuses on dealing with hunger, including as a result of natural disasters in developing countries. http://www.wfp.org
39.	World Health Organization - Division of Emergency and Humanitarian Action	Focuses on health with activities covering Health action in crises. http://www.who.int/topics/disasters/en/, http://www.who.int/eha
	UN regional bodies	
40.	CEPAL/ECLAC Economic Commission for Latin America and the Caribbean (*Comisión Económica para América Latina y el Caribe*)	Aims to contribute to the economic development of Latin America. http://www.eclac.cl/cgi-bin/getProd.asp?xml=/publicaciones/xml/8/14978/P14978.xml&xsl=/portofspain/tpl-i/p9f.xsl&base=/tpl/imprimir.xsl
41.	IRIN	Provides news and analysis about sub-Saharan Africa, the Middle East and Central Asia for the humanitarian community as part of OCHA. http://www.irinnews.org
42.	PAHO The Pan American Health Organization	The Regional Office for the Americas of the World Health Organization, which promotes Health in the Americas. http://www.paho.org/english/dd/ped/home.htm
43.	SUMA Humanitarian Supply Management System	Promotes transparency and accountability in the management of relief supplies and is the regional standard for PAHO/WHO Member Countries. http://www.disaster-info.net/SUMA/english/index.htm
44.	UN ECE United Nations Economic Commission for Europe	Aims to foster sustainable economic growth among its 55 member countries. http://www.unece.org

Appendix 8 continued

	Organisations, Resources and Events	Note
	UN regional bodies	
45.	**UN ESCAP** United Nations Economic and Social Commission for Asia and the Pacific	The regional arm on promoting economic and social development of the United Nations Secretariat for the Asian and Pacific region. http://www.unescap.org/
46.	**UNECA** United Nations Economic Commission for Africa	The regional arm of the UN in Africa, it supports the economic and social development of its 53 member States. http://www.uneca.org/
47.	**UNESCWA** United Nations Economic and Social Commission for Western Asia	Promotes economic and social development through regional and subregional cooperation and integration in Western Asia. http://www.escwa.org.lb/
	International	
48.	**AlertNet** 'Alerting humanitarians to emergencies'– Reuters Foundation	Humanitarian news network to keep relief professionals and the wider public up-to-date on humanitarian crises around the globe. http://www.alertnet.org/
49.	**ALNAP** The Active Learning Network for Accountability and Performance in Humanitarian Action	An international, interagency forum working to improve learning, accountability and performance across the Humanitarian Sector. http://www.alnap.org/
50.	**CRED** Centre for Research on the Epidemiology of Disasters	Covers International Disasters Data Base (EM-DAT), Documentation Centre (EM-BID) and disasters of the week news. http://www.cred.be
51.	**DAC** Development Assistance Committee	The principal body through which the OECD deals with issues related to co-operation with developing countries. http://www.oecd.org/dac
52.	**DIPECHO** European Community Humanitarian Office Disaster Preparedness Programme	Supports projects in the Central America, Central Asia and South-East Asia in disaster preparedness programme. http://europa.eu.int/ omm./echo/field/dipecho/index_en.htm
53.	**Disaster Mitigation and Management** of GDRC - the Global Development Research Center	Emphasizes the importance of disaster prevention and response management - focussing on disaster preparedness. http://www.gdrc.org/uem/disasters/
54.	**Fritz Institute**	Addresses complex operational challenges in the delivery of humanitarian aid to people and communities in need worldwide. http://www.fritzinstitute.org/
55.	**GADR** - The Global Alliance for Disaster Reduction	An epistemic community of more than 1000 experts on disaster reduction and related aspects of sustainable development. http://www.gadr.giees.uncc.edu/
56.	**IDRM** International Institute for Disaster Risk Management	Promotes international standards and world best practices in risk management in developing countries. http://www.idrmhome.org/
57.	**IFRC** International Federation of Red Cross and Red Crescent Societies	Assists the world's most vulnerable people and focuses on health, disaster management and promoting humanitarian principles. http://www.ifrc.org/
58.	**LACDE** – Local Authorities Confronting Disasters and Emergencies	Assists local authorities around the globe in their struggle against disasters and emergencies. http://www.ulai.org.il/lacde.htm
59.	**Munich Re**	Provides NatCat service, a guide to the Munich Re database for natural catastrophes. http://www.munichre.com/publications/302-03901_en.pdf?rdm=57672
	Regional Finance Institutes	
60.	**ADB** - Asian Development Bank	Has a comprehensive disaster and emergency assistance policy that provides rehabilitation and reconstruction assistance. http://www.adb.org
61.	**BID/IDB** - Inter-American Development Bank (Banco Interamericano de Desarrollo)	Has developed indicators of Disaster Risk and Risk Management - Risk Management Index (RMI). http://www.iadb.org/exr/disaster/rmi.cfm?language=en&parid=5

Appendix 8 continued

	Organisations, Resources and Events	Note
	Regional Finance Institutes	
62.	CDB - Caribbean Development Bank	Has Disaster Mitigation Facility for the Caribbean (DMFC) http://www.caribank.org/
	Regional organisations	
63.	ADPC - Asian Disaster Preparedness Centre	Asian regional institution that coordinate comprehensive disaster risk management across national borders, based in Bangkok, Thailand. http://www.adpc.ait.ac.th
64.	ADRC - Asian Disaster Reduction Centre	Promotes promote multinational disaster reduction cooperation in the Asian region. http://www.adrc.or.jp/top.asp
65.	Caribbean Disaster Mitigation Project	A project of the USAID Office of Foreign Disaster Assistance and the Caribbean Regional Program http://www.oas.org/CDMP/
66.	CDERA - Caribbean Disaster Emergency Response Agency	An inter- governmental regional disaster management organisation of the Caribbean Community (CARICOM). http://www.cdera.org/
67.	Centro Régional de Información sobre Desastres (CRID) (América Latina y el Caribe)	Regional Disaster Information Centre for Latin America and the Caribbean. http://www.crid.or.cr/crid/ing/index_ing.html
68.	CEPREDENAC - the Coordination Centre for the Prevention of Natural Disasters in Central America	Promotes natural disaster reduction, through the exchange of experience, technology and information in Central America. http://www.cepredenac.org
69.	CONRED - Coordinadora Nacional para la Reducción de Desastres (Guatemala)	National Coordinator of disaster reduction in Guatemala, Central America. http://www.conred.org/principal.php
70.	Disaster Web Site of Andean Countries	Integrates all the institutions working in disasters in the Andean Countries. http://www.disaster-info.net/PED-Sudamerica/
71.	ECHO office for the Caribbean	A project of Disaster Preparedness, Information and Mitigation in the Caribbean. http://www.deldom.cec.eu.int/es/echo/about_en.htm
72.	FEMID - Strengthening of Local Structures for Disaster Mitigation (Fortalecer Estructuras Locales para la Mitigación de Desastres)	CEPREDENAC'S programme in Central America. http://www.cepredenac.org/10_femid/10_index.htm
73.	Health and the Displaced Population in Colombia	Focuses on Health and Displacement in Colombia and neighbouring countries. http://www.disaster-info.net/desplazados/index.cfm?idioma=ingles
74.	Hospital Seguro	Provides assistance in normal and emergency times to local and regional institution in the topics of vulnerability assessments. http://www.hospitalseguro.cl/secciones/ingles/index.html
75.	LA RED - The Network for the Social Study of Disaster Prevention in Latin America *(La Red de Estudios Sociales en Prevención des Desastres)*	Focuses on research on prevention and management of disasters in Latin America, from a social perspective. http://www.desenredando.org/index.html
76.	LEADERS	International course to design and implement disaster reduction programs, in South and Central America and other part of the world. http://www.disaster-info.net/LIDERES/english/jamaica/index.htm
77.	RELSAT – Mobilizing the population with participatory earlywarningsystems	A programme on introduced participatory early-warning systems in six areas in Central America threatened by floods.
78.	Training material on chemical accidents	Promotes the international course "Prevention, Preparedness and Response to Disasters caused by Dangerous Chemical Products". http://www.disaster-info.net/quimicos/index.htm

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	UK	
79.	ActionAid	Prioritises HIV & AIDS, food and hunger, women's rights, the right to education, the right to human security and the right to just governance. http://www.actionaid.org.uk/
80.	British Red Cross	Responds to crisis, conflicts, natural disasters and individual emergencies to helps vulnerable people in the UK and abroad. http://www.redcross.org.uk/index.asp?id=39992
81.	CAFOD – Catholic Agency for Overseas Development	A relief agency of the Catholic Church in England and Wales, which has been fighting poverty in developing countries since 1962. http://www.cafod.org.uk/
82.	CARE International UK	Focuses on tackling poverty, conflict and peace, emergencies, HIV and AIDS, health, water and sanitation, food and farming. http://www.careinternational.org.uk/
83.	Christian Aid	Focuses on poverty with a vision of world free from poverty. http://www.christian-aid.org.uk
84.	Concern	Aims to enable absolutely poor people to achieve major improvements in their lifestyles, which are sustainable. http://www.concern.net/
85.	DEC - Disaster Emergency Committee (UK)	Launches and co-ordinates the UK's National Appeal to major disasters overseas as an umbrella organisation of 13 leading UK aid agencies. http://www.dec.org.uk/
86.	DFID - Department For International Development	DFID's Disaster Risk Reduction Policy provides a framework to integrate disaster risk reduction measures more effectively. http://www.dfid.gov.uk http://www.dfid.gov.uk/news/files/disaster-risk-reduction-launch.asp
87.	Help the Aged	Its vision is of a future where older people are free from the disadvantages of poverty, isolation and neglect. http://www.helptheaged.org.uk/default.htm
88.	Islamic Relief	Focuses on the needs of the world's poorest people. Its work ranges from emergency relief to long-term development projects. http://www.islamic-relief.com
89.	Merlin	Specialises on health care and medical relief for vulnerable people in natural disasters, conflict, disease and health system collapse. http://www.merlin.org.uk/
90.	Oxfam	A development, relief, and campaigning organisation that works with others to find lasting solutions to poverty and suffering around the world. http://www.oxfam.org.uk/
91.	Save the Children	Focuses on children in the UK and around the world who suffer from poverty, disease, injustice and violence. http://www.savethechildren.org.uk
92.	Tearfund	Focuses on relieving suffering and offering hope during relief and in development, and tackling the underlying cause of poverty. http://www.tearfund.org/
93.	World Vision	A relief and development agency, which focuses on poverty, hunger and injustice, irrespective of religious beliefs. http://www.worldvision.org.uk/

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	Other Countries	
	India	
94.	**AIDMI** - All India Disaster Mitigation Insititute	Focuses on disaster risk reduction for the poor in India on Water Security, Habitat Security, Food Security and Livelihood Security. http://www.southasiadisasters.net/
	Germany	
95.	**Directory for Disaster Reduction Institutions**	Promotes exchange of information, collaboration, and establishment of mechanisms of disaster reduction at local and regional levels. http://www.unige.ch/idndr
96.	**DKKV** - Deutsches Komitee für Katastrophenvorsorge	The national and international platform for disaster reduction in Germany. http://www.dkkv.org
97.	**ZENEB** Centre for Natural Risks and Development (*Zentrum für Naturrisiken und Entwicklung Bonn/Bayreuth*)	Develops approaches to reducing vulnerability to natural hazards in a collaborative effort between scientists and practitioners. http://www.zeneb.de

Credits

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