

A Contribution to the Review of the draft GAR 2011, Chapters 5, 6 & 7

Political Will for Disaster Reduction: What Incentives Build It, And Why Is It So Hard To Achieve?¹

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Villagers, NGO workers and local government staff work on table top 3D map as part of community-based disaster risk reduction planning (source: JC Gaillard)

INTRODUCTION

Two of the several ways of creating political will are good governance and economic incentives. The *Global Assessment Report on Disaster Risk Reduction* for 2009 acknowledged the importance of good governance for sustained efforts in disaster risk reduction (UNISDR 2009: 19). It pointed out that, while Disaster Risk Reduction (DRR) can result in significant savings, and thus should be regarded as an investment, often it is perceived as a cost (see also Kelman and Poole 2006). Thus, the benefits of DRR action should be made clearer and more tangible to

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key decision-makers, which usually means more quantitative analysis especially in financial terms. These points have been reinforced by the World Bank's recent publication, *Natural Hazards, UnNatural Disasters* (World Bank 2010) and in the first draft of the *Global Assessment Report on Disaster Risk Reduction 2011*.

Other ways to strengthen the effectiveness and political ownership of the DRR agenda so as to build domestic political will include:

- Government respecting, protecting, and fulfilling human rights relevant to the safety and protection of its people;
- Setting specific time-bound targets for risk reduction, with clear individual and institutional roles, responsibilities and measurable commitments;
- Establishing methods for auditing progress toward targets with graduated sanctions for non-compliance;
- Undertaking research to demonstrate the value of DRR investments.

These conventional 'top-down' approaches could be reinforced by 'demand side' bottom-up actions such as:

- Raising critical awareness of disaster risk amongst vulnerable people and 'social demand' for risk reduction measures. Disasters can serve as a trigger which can change public perceptions of acceptable risk, helping governments to adopt policy reforms and new approaches to risk reduction;
- Increasing capability of vulnerable people to advocate on their behalf and capacity of those who work with them;
- Increasing public accountability by strengthening local-scale democracy (including decentralization of DRR-related activity);
- Establishing impartial monitoring mechanisms at the impact level with strong civil society involvement;
- Strengthening political demands for improved governmental action for DRR by joining forces among different interest groups, creating alliances among those working on issues such as social justice, poverty, environmental protection, climate change, and food security;
- Building social capital and forging of partnerships between local state and non-state actors, especially creating alliances among those working on issues such as social justice, poverty, environmental protection, climate change, and food security.

DRR is not only a developing world issue. Recent disasters in the developed world (e.g. Hurricane Katrina in the US, heat and cold extremes in Europe, drought, fires and floods in Australia, and an earthquake striking Christchurch, New Zealand) have shown that it is a serious concern in developed countries as well. DRR needs to be improved in all countries and internationally, recognising the inseparable social, economic and environmental connections that both attenuate and exacerbate impacts.

Our purpose is to suggest ways public institutional arrangements for DRR can be strengthened and made more effective.

Context for Increasing Political Will

The UN's framework for 'significantly' reducing disaster risk by 2015 calls on governments, among other stakeholders, to do five things. These are the five 'priority areas' of the Hyogo Framework of Action (HFA) (<http://www.unisdr.org/eng/hfa/hfa.htm>):

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

Each of these activities requires political leaders and public servants in government administration at different levels (e.g. national, provincial or district, and local) to allocate their own and others' labour time, financial and technical resources and political influence – all scarce resources. So the question must arise, why should they make the effort? What are the incentives? This might also be called the question of political will.

In this concept paper we discuss kinds of incentives, experience so far with such incentives in various parts of the world, obstacles encountered and opportunities to use incentives more effectively for implementing the HFA. We also touch on the pre-requisites for the effectiveness of different kinds of incentives.

INCENTIVES FOR DISASTER RISK REDUCTION

Incentives can be broken down into several categories: political, economic, legal, administrative and moral/ethical, all of which take specific forms according to the social and cultural norms of different locations.

Political Incentives

In political systems where leaders are elected, the electorate may judge and reward a leader's performance by the degree to which she or he is perceived to be active in the electorate's material interest and welfare. This may include delivery of social protection and other public goods and services including disaster risk reduction (DRR). However, this incentive assumes (a) that the citizens (electorate) are aware of DRR as an achievable goal; (b) that standards or benchmarks exist against which to measure a leader's performance and that (c) the electorate is also aware of these standards and benchmarks. Furthermore, these pre-requisites themselves require certain conditions including (d) a free media which also means not being entirely dominated by a for-profit stance which can skew what is publishable, (e) existence of risk and DRR-focused watchdog organizations, (f) communications infrastructure and, (g) adult literacy and numeracy. Unfortunately, the general public may not be accustomed to thinking in terms of benchmarks and standards. Also, short term interests and societal perceptions of 'acceptable risk' may limit social demand for action by government. Overall, a key question becomes: *how to create social demand if people themselves have other priorities?*

For example, a recent survey in Nairobi, Kenya, found that more than three-quarters of the variance in responses to questions about environmental and socio-economic problems was explained by concerns such as corruption, unemployment, crime, street children, garbage, transport, poverty, pollution of the Nairobi River, HIV/AIDS and immorality/promiscuousness (Shisanya and Kyayesi 2007). Disasters were not a high-priority concern.

Thus, people (i.e. the electorate) may heavily discount future losses and tend to opt against present investments that could protect their assets in the future due to more immediate concerns. In such contexts, one way to create social demand for DRR is by exposing the direct connections between risk considerations and development (i.e. livelihood) priorities or other local priorities.

Governments respond to interests besides those of the electorate. Status and 'ranking' among countries considered peers may also play a role, and certainly the interests expressed by the private sector and others within networks of power influence government attention and priorities. As one co-author argues, 'power serves power'. Therefore the challenge of motivating governments to be active in DRR requires also the identification of the means of influencing them indirectly via regional and economic groupings, as well as through the private sector.

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Much of the discussion of governments responding its citizens also presupposes that the electorate wish to be involved and do get involved. In some democracies people choose not to vote (IDEA 2010). Even those voting might have made no effort to understand any parts of the

platforms or democratic process. Where voting is mandated by law, as in Australia, about two per cent of the electorate fills out the ballot without looking at the candidates' names, casting a so-called 'donkey vote'

(<http://www.australianpolitics.com/elections/features/donkey.shtml>).

Similarly, if disasters are responded to effectively, political leaders can find political capital in that. In the US, presidential disaster declarations tend to increase in presidential election years. In 2002, German Chancellor Gerhard Schröder sealed a come-from-behind re-election victory in large part due to his energetic response to major floods (Schoen 2004; Bechtel and Hainmueller 2010). Conversely, political leaders in Norway and Sweden were hammered by their failure to rapidly help their overseas nationals after the 26 December 2004 tsunami struck (Strömbäck and Nord 2006). Politicians might have reasons to avoid DRR, but none-the-less must be ready to show leadership when a crisis strikes. The use of DRR benchmarks and standards might assist in shifting away from a 'crisis leadership' mentality towards 'crisis prevention leadership'.

Standard-setting and compliance with standards emerge as the result of consolidating experiential learning and good practice, together with bottom-up expressions of social demand and also because the private sector sees standards as providing stability and predictability in the business environment. Groups of countries may also perceive standards as necessary to avoid internal instability in neighbouring countries. All of these groups – the electorate or (more broadly) residents and citizens of a territory, the private sector and regional/ international bodies put pressure on governments to bind themselves to standards. Other actors such as civil society and international agencies may distil and suggest standards (such as the SPHERE standards, see www.sphereproject.org) but that alone is not enough to bind governments.

What also complicates the question of political incentives is that they overlap with economic ones, especially where personal interests of particular political leaders are involved (corruption or gray areas that approximate it). For example, an individual politician may approve development of housing in contravention of zoning regulations as a favour to a friend or supporter, or a government might encourage non-sustainable livestock grazing or fishing practices in order to win over herder or fisher households, especially where they are a large segment of the electorate. Essentially, these political/economic incentives work against those that would encourage governments to pursue DRR. It is worth extracting these disincentives and setting them beside the political incentives that favour DRR in order to appreciate their relative balance and relationship. One also has to take the time dimension into account, exploring how a particular politically motivated decision emerges over time.

Economic Incentives

We have seen how political and economic incentives are interwoven. If one narrows the realm of the economic to government finance alone, some more clearly 'economic' incentives emerge.

At its simplest, government finance is a matter of revenues (including public or sovereign debt) and expenditures. On the side of expenditure, one would expect government leaders to want to avoid loss of capital investment in infrastructure and other public assets that could be protected from natural hazards and/or insured. Such an assumption of economic rationality may or may not

be correct. As in the case of political incentives, standards and benchmarks are also relevant to economic incentives. Just as there are norms for transparency in accountancy and standards of fiduciary responsibility, there can and should be explicit expectations concerning reduction of public financial loss due to avoidable harm to infrastructure and other public assets. 'Expectations' are weak unless they are made explicit in law as the responsibility of designated public officials. This leads to a consideration of legal incentives, discussed in the following section.

The threat of large losses from climate-related hazards (World Bank 2010; IPCC 2011) might act an economic incentive not only for climate change adaptation (CCA) in general, but quite specifically for DRR. There are some problems associated with tying DRR incentives exclusively or even too closely to CCA. Obviously there are serious natural hazards that have nothing to do with climate such as earthquake and volcanic eruption. Ironically and tragically, Haiti's seismic risk was well known among experts long before the catastrophic event in January 2010, but preparedness and risk reduction efforts had been focused on climate-related hazards. Another stumbling block might be the way in which some governments use CCA funding for large-scale megaprojects that displace the poor. For example construction of a large dam might actually increase vulnerability of one group (e.g. the rural poor) in efforts to provide continuity of electricity and water supply, thus reducing the vulnerability of another group (e.g. urban residents) (Wisner 2010a).

Many new forms of insurance are now available at various scales, from catastrophe bonds through which a city might insure its entire educational infrastructure to climate indexed climate insurance that benefits individual small farmers.³ Still, penetration of insurance among home and other property owners is highly variable around the world and events over the past several decades have driven many insurance companies out of the earthquake and hurricane market in countries such as the United States and flood insurance markets in parts of Europe.

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In addition, some experiences have shown that, when improperly used, insurance can increase individual risk-taking behaviour. For example, in the UK, when flood insurance was universally available, little incentive existed to avoid building floodplains or to include flood resistance measures in properties.

In this way, trusting insurers to compensate them, governments and home owners take risks they would otherwise have not. More is needed to make the most of insurance as an economic incentive for DRR. An example of such risk sharing is the bundling of micro-

³ See ILO (2006); Kreidler and Wagner (2006); Linnebooth-Bayer and Mechler (2007); Hellmuth *et al.* (2009); Llanto and Badiola (2010).

insurance and loans, or insurance instruments that incorporate the benefits of DRR into their premiums rates, i.e. lower them for those who have made specific DRR investments. The latter types of instruments are currently being developed and tested at both micro and macro levels.

Where some proportion of government revenue comes from overseas development assistance, there would be a strong incentive to engage in DRR if development partners earmark funds for that purpose and advocate such actions. However, this raises questions about ‘ownership’ and sustainability. Will the government continue to pursue DRR as a priority once the earmarked funds finish? Will the government realise that it gets far more assistance, with far less accountability, when it comes in the form of humanitarian relief than it does when the assistance comes in the form of DRR and development funds?

Legal Incentives

Laws may be passed at the national level that require various levels of government to implement elements of the HFA. Many of these laws exist, some stimulated by parliamentary interest following the adoption of the HFA (agreed in January 2005 by 168 states). The HFA does not have the status of a binding treaty, but it came at a time when a number of high profile and costly disasters prompted many national legislative bodies to draft or revise laws dealing with DRR. Therefore, the HFA provides an important opportunity for states to implement domestic measures that meet globally agreed upon standards.

Once national laws are passed, the question of implementation and enforcement arises, most often, but not exclusively, within individual national legal contexts. These laws require provisions for implementation, bylaws for local enforcement and provisions for funding. They exemplify the adage: ‘the devil is in the detail’. In addition, one needs to ask who will judge whether government is meeting its responsibilities. Is the judiciary or relevant monitoring body independent? Is it competent to judge such matters? Are there penalties for non-implementation?

Once laws are on the books, the question of implementation and enforcement arises.

For states that have ratified international human rights treaties, there is an opportunity to tie DRR measures to existing legal obligations and to rights contained in the Universal Declaration of Human Rights. Various agreements, including the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights, contain a ‘duty to protect’ citizens from the threats to life, housing, and other elements of life required for human dignity that are posed by non-state sources, including natural hazards. These duties are binding on most countries in the world (for all that countries may choose to selectively ignore them). The legal duty arises from the obligation to protect from arbitrary deprivation of life, or from violations to the right to health or housing (for example), not from the hazard itself - meaning, there is an acknowledgment that some deaths might be unavoidable, and it would not violate human rights law to have such unavoidable effects. Current research is exploring how far this legal duty can go in terms of pre-existing vulnerabilities that are structural in nature (Carmalt and

Haenni Dale 2011). However, it is clear that states at least have a duty to protect from arbitrary deprivation of life, and to do so in non-discriminatory ways, even in the context of non-state threats such as natural hazards.

Box 1: Human Rights and ‘Practical’ Decisions

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Under international human rights law, the first priority is to respect, protect, and fulfil human rights for all people. This requirement can provide a standard for making decisions about how to structure or fund certain programs or policies: whichever structure or policy does a better job of respecting, protecting, and fulfilling human rights is the structure or policy that should be chosen. All other considerations (e.g. profit for third parties, other governmental interests, etc.) must demonstrate how they will ensure the human rights at stake. For example, in the context of reducing the risk of disasters, there might be a question of whether to spend money on a tsunami warning system or on an educational program about tsunami safety. According to human rights, you make that decision by asking which method would protect the most lives, keeping in mind issues of non-discrimination and other rights that might come into play given the particular context. Other things, like the profit made by the makers of the tsunami warning system, or the political kudos a government might get for instituting one, or even the amount of money it costs, are all secondary concerns. Of course, these decisions cannot be made in isolation - for example, you could institute a cheaper educational program and that could leave enough money to ensure that people's houses are strengthened to withstand earthquakes - but overall, the decision-making process itself must put human rights first. Moreover, the process should also involve the participation of the affected population at every step of the way in order to determine which rights are most important for the people facing risk.

A rights-based decision-making process becomes particularly important in the context of private development and corporate involvement in risk reduction - the profit margins are less important, from a human rights perspective, than the degree to which a measure upholds human rights. This is not to say that a rights-based approach would exclude private sector involvement from DRR; on the contrary, from a rights-based approach, it would not matter whether the private sector was involved or not. It would only matter that the measures being implemented can be shown (through a participatory process) to respect, protect, and fulfil human rights for the affected population. The idea is that in any balance between two competing interests, the balance must tip towards the interest that best respects, protects, and fulfils human rights.

Box 1 Ends

Law is not a panacea. Application of legal provisions may, in fact, actually increase rather than decrease vulnerability to hazards. For example, if land use regulations are used to evict the poor with no adequate provisions for resettlement, increased vulnerability to hazards may be the result. Moreover, experience from countries as diverse as Mozambique and Germany has shown that legal frameworks are not necessarily the main catalysts for effective DRR.

Administrative Incentives

Many of the functions of government are carried out by non-elected, professional civil service employees. Incentives in this context have to do with career advancement, professional recognition, competition and reward, sense of duty and other individual factors. In many ways, the most significant challenge to the implementation of DRR rests with public servants, who generally struggle with limited budgets and staff and have many competing responsibilities. Other constraints include lack of transport, limited support from district offices and high turn-over of staff.

In some parts of the world disaster risk management has been professionalised, and there are degree courses available, a number of on-line training courses and certification though various national, regional and international associations. Professionalisation has so far only marginally touched upon DRR as it has mostly focused on more conventional emergency management. Nevertheless, the potential is there to extend training and career ladder advancement into the area of risk reduction.⁴

If DRR is institutionalized as the responsibility of a new, separate unit within government, it must compete for budgetary resources with long established departments such as health, public works and education. Alternately, if DRR is implemented as a ‘cross cutting’ priority, then functionaries in these old, existing bureaux may feel threatened by increased work loads or feel no allegiance to these additional responsibilities. This ‘threat’ may be based on a misunderstanding of potential win-win relations. Sectoral work can be done *better and more sustainably* -- for example rural development, health, education – when they incorporate DRR. Nevertheless there may be perceptions of ‘competition’ for jurisdiction and resources, and these perceptions can impede cooperation act as a strong disincentive.

The greatest burden of implementing the DRR lies with public servants who generally struggle with limited budgets and staff and have many competing responsibilities.

Moral/Ethical Incentives

Political and public service is largely about power and control of access over resources. Nevertheless, it would be cynical to say that ethical norms are irrelevant. At a minimum, there is common recourse to the ethos of self sacrifice for the common good and reference to ancestral, charismatic leaders (real or mythical) in the rhetoric of contemporary politicians. This is an area where the influence of regional and global organizations is evident. Informally there are many regional declarations, as well as UN and other international pronouncements that advocate DRR as something that good leaders *should do* because *it is the right thing to do*. It is defined as part of ‘good governance’ and, as mentioned above, there is a legally binding ‘duty to protect’ articulated by international human rights agreements.

⁴ For example the International Association of Emergency Managers <http://www.iaem.com/>.

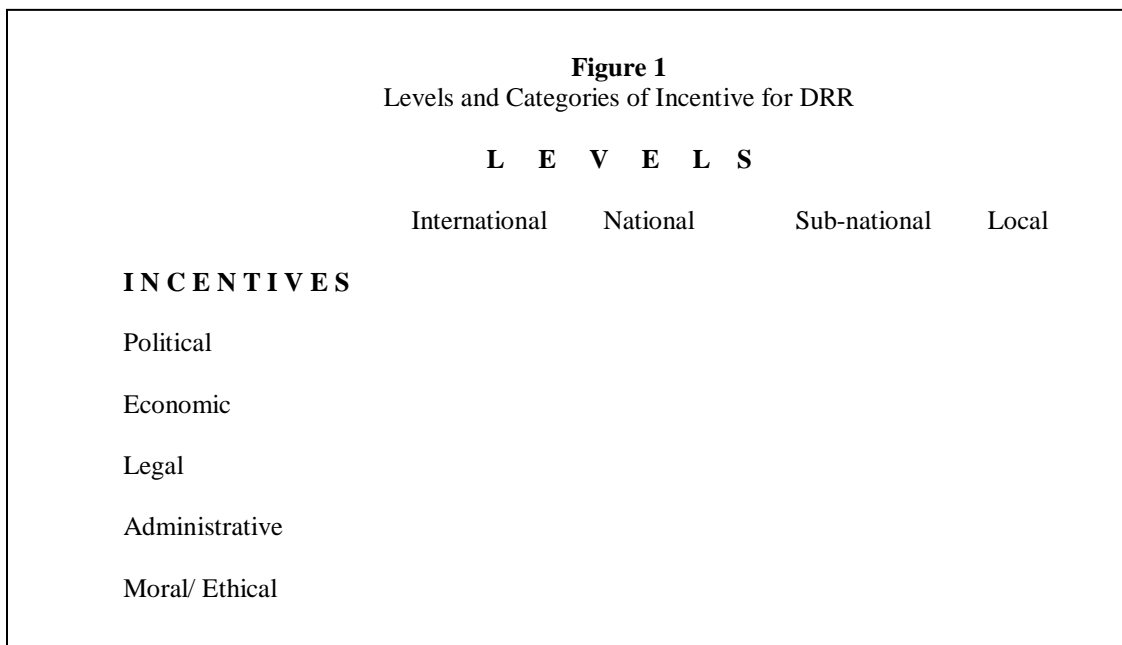
One might distinguish professional ethical standards (as in engineering or medicine) from individual moral judgments based on prevailing value systems. Ethical standards of performance and norms of professional behaviour vary by profession. They are learned both formally and informally through practice and apprenticeship. Some are more strictly monitored and enforced, as in medicine and law, and violations can result in one's losing the privileges of membership in professional organisations or one's license to practice. Others such as the ethical standards for participatory research or journalism are less formally enforced. Various engineering specialties fall somewhere between the two.

Underlying moral judgements, all the world's religious traditions contain teachings that urge compassion and care for people in distress, the poor and the unfortunate. These teachings may be overridden by 'reasons of state' or other motives, yet they are still there in the back of political decision makers' minds. Such teachings certainly must add to the other incentives discussed above, at least in so far as they nudge leadership toward provision of disaster relief. Add to these teachings those that concern nature and human's duties of stewardship and earth care – also universal in various forms in the world's religions – and there the basis exists for DRR (Reale 2010; Gaillard and Texier 2010; Wisner 2010b). We are not naïve enough to believe that moral/ethical incentives act in the political realm by themselves, but they certainly can add force to the other kinds of incentives discussed.

It would be cynical to say that ethical norms and moral judgments are irrelevant.

Understandings one's duties and others' rights are affected by international norms, but they also take specific socio-cultural forms and are subject to specific interpretation and expression. These expressions differ with major religious traditions and even more finely within linguistic communities with shared history.

Figure 1 provides an overview the kinds or categories of incentive just discussed, each of which will be explored more fully below with examples from various parts of the world. As one sees in figure 1, these kinds of incentives can be seen at various spatial scales. It bears repeating, however, that in the real world, categories interact, overlap and even merge, and actors/institutions at different spatial scale also influence each other. For instance, behind the reconstruction of Port-au-Prince's historic central covered market, the *Marché en Fer*, lie economic and moral incentives of the billionaire CEO of an Eire-base digital communication company with interests in Haiti, political incentives of elite Haitians and bureaucrats and moral as well as ethnical incentives that influenced foreign and local Haitian architects, engineers and other technical experts (BBC 2011).



**COUNTRY EXPERIENCE WITH INCENTIVES:
WHAT WORKS & WHAT OBSTACLES PERSIST**

This section does not seek to be exhaustive but only to exemplify some incentives and their supporting context.

South Africa (lead author Dewald van Niekerk)

At the national level South Africa has a political commitment to disaster risk reduction. This is expressed in the Green Paper on Disaster Management (1998), the White Paper on Disaster Management (1999), the Disaster Management Act No. 57 of 2002, as well as the 2005 National Disaster Management Policy Framework and its priority guidelines (NDMC and Reed 2008).

National level commitment is transmitted to the provinces and municipalities by using the routine budget process as both stick and carrot. This constitutes a strong economic and administrative incentive for implementation at those decentralized levels.

One of the most significant legislated requirements is the need for the integration between provincial and municipal level development planning and DRR. This requirement is quite significant due to the fact that the integrated development process should drive the budget process of municipalities. Thus, if a development intervention is not part of this five-year planning process of municipalities, then rightfully it should not be funded. The presence of DRR should influence decisions on development, which in turn will have a direct funding impact. This is one economic incentive for disaster risk management, albeit not overtly communicated.

Although political commitment is enshrined in policy and legislation, in South Africa there has so far been very limited integration of DRR into routine development planning (Hoogstad and

Kruger 2008). This is in stark contrast to a recent study (Botha *et al.* 2010) conducted by the African Centre for Disaster Studies for the South African Local Government Association (SALGA) in more than forty per cent of all South African municipalities. The research found that over three quarters of the sampled municipalities feel DRR practices are integrated in their development planning. Although the perception of integration exists, in practice this remains limited. The difference between perception and reality can be ascribed to either ignorance or lack in skill and competence, and it points to the need to build capacity at the municipal level.

Thus political will at national government level and that at municipality level is not necessarily the same. There seems to be a degrading in political will for disaster risk management as one progresses down the government hierarchy. DRR could enjoy more direct attention at the municipal level if one could find a way in tying effective disaster risk reduction actions to audit reports.

The National Policy Framework for Disaster Management clearly states that each government department must identify a disaster risk management focal point. It goes further to stress the need for including disaster risk management within the job description of these individuals. In such a way an administrative incentive is offered for public servants to address disaster risk reduction through a multi-sectoral approach. Yearly assessment of disaster risk management will thus occur through the personnel performance management system. If fully implemented, this addition to personnel performance reviews as well as inclusion of DRR activities in audits of municipal activities should increase incentives, but the question of capacity building and providing the technical support for municipal action must also be addressed.

Algeria (lead author Djillali Benouar)

During the last three decades Algeria has experienced several disasters, particularly the strong 7.2 earthquake which struck the area of El Asnam on 10 October 1980, causing the loss of 3,000 lives and damage of more than three billion U.S. Dollars. Other disasters since then include the floods of the Bab El Oued section of Algiers on 10 November 2001 which took more than 750 lives, the dramatic 6.8 Boumerdes earthquake of 21 May 2003 and the catastrophic floods of Ghardaia (southern Algeria) of 2 October 2008. These events raised the awareness of both the government and civil society alike concerning the need for disaster risk reduction (DRR) policy.

In 1985, the Algerian government adopted a national plan for prevention and management of natural and technological hazards. The Ministry of Interior is in charge of disaster risk management through the General Directorate of Civil Protection. Several other decrees and multi-hazard national plans have been adopted to reduce disaster risks. The national plan was updated and reinforced in July 2003 after the lessons learned from different earthquakes

Political, economic and administrative incentives have all had a role in motivating government to take these steps. Political commitment is visible in policy and legislation and has encouraged administration throughout the country to integrate DRR into development planning. The central government provides administrative incentives for all

levels of the administration to address disaster risk reduction. For example, over the past few years, the government has tripled the previous amount of budget resources to flood control for cities with recurrent flood disasters as Algiers, Annaba and Ghardaia. Despite such steps toward decentralisation, the central government is still in charge and responsible for the whole socio – economic development of the territory which makes the integration of DRR in the various planning easier. The government has also launched microzonation studies for several cities with potential earthquake hazard, vulnerability assessment has been conducted for hospitals, schools and critical public building and several of them have been retrofitted.

In terms of economic incentives, the government has assisted technically and financially the public and private property owners to rebuild their earthquake damaged structures according to the predominant Algerian seismic building code, in effect, enabling them to ‘build back better’. Also in 2004, the government adopted a new law that should make earthquake and insurance work more effectively. Earthquake insurance in Algeria is a public, government-run scheme, and the great losses in the Boumerdes event were fully covered but with difficulty. So the government has launched a wider insurance pool similar to the Turkey Catastrophic Insurance Pool (TCIP) (World Bank 2008).

Administrative and professional incentives have also been provided through education and training. In the wake of the 2003 Boumerdes earthquake, seminars, conferences and short courses have been organized through universities and research centres for the training in earthquake risk reduction of about 1,500 engineers and architects. Also in terms of research, among the 34 National Research Programmes initiated by the central government, three deal directly with DRR.

Since 2003 the government has strengthened the national policy and the legal and regulatory framework for DRR. In 2004 it adopted a law that updated regulation of land management and urban planning, known as the National Scheme for Land Use Planning. This update and revision integrated DRR into the new provisions. Also in 2004 the Ministry of Habitat and Urban Planning issued new Earthquake Resistant Building Regulations. This revision of the Algerian seismic building code which has been in force since 1981 deals mainly with a new zoning map and more restrictions for reinforced concrete beam-columns building systems considered as very vulnerable.

Philippines (lead authors JC Gaillard and Zen Delica Willison)

In the Philippines, DRR initiatives have been boosted by both a significant push from civil society and positive feedbacks from previous experiences. Both lobbying and the effect of positive experience of hazard impacts averted have produced strong political incentives for even more implementation of DRR (Center for Disaster Preparedness 2005).

Civil Society Organisations (CSOs) have been active at all scales, from the local to the national level. Positive experiences have been more powerful at the local and provincial scales. At the national level, the recent enactment of the Disaster Risk Reduction and Management (DRRM)

Act of 2010 resulted from continuous and intense lobbying by CSOs and NGOs⁵ since 1997. Thus, to the extent that legislators perceived this lobbying to represent the will of their constituents, one must say that political incentives were strong in the Philippines case.

To strengthen and coordinate their activities, CSOs, NGOs along with academics, have organized into a nationwide network called DRRNetPhils. The network has engaged in a permanent and fruitful dialogue with government agencies and policy makers, especially members of the congress and senate who drafted the bills that eventually merged into the DRRM Act. Members of the DRRNetPhils have provided experience-based feedback on each version of the bill. Representatives of the DRRNetPhils have also lobbied each senator and congressman to convince them of the importance of passing a new progressive law for reducing the risk of disaster.

The province of Albay in Southern Luzon provides an example of incentives based on positive feedback. Albay suffers from recurrent tropical cyclones and eruptions from the Mt. Mayon volcano. In facing such threats the provincial government has been mainstreaming DRR in its development policy since 1994. Activities to foster DRR include hazard and vulnerability assessment, land-use planning, community-based and scientific warning and pre-emptive evacuations. These measures have proved to be successful as no people were killed by three consecutive eruptions of Mt Mayon and two powerful cyclones between 1995 and 2006. These positive initial results encouraged the provincial government, under the strong leadership of the governor, to further strengthen its policy through the inclusion of climate change adaptation in development policies both at the provincial and local levels.

Positive feedback also serves as a powerful incentive at the local level. In September 2009, typhoon Parma swept through the city of Dagupan in Northern Luzon and brought the most severe floods in recorded history. Yet none of the 150,000 inhabitants was killed while five hundred people died in the surrounding towns and provinces. Over the past few years, the local authorities in Dagupan have invested significant resources in DRR and in mainstreaming it within the city development plan. Through partnerships established with NGOs and CSOs, the local government came up with a comprehensive strategy which includes strengthening livelihoods, disaster preparedness training, early warning systems and emergency management. The success of these measures and their recognition at the national level through different awards, have encouraged the city government, to maintain its commitment to reducing the risk of disaster and strengthening people's livelihood, despite electoral turnovers.

Another example comes from Camiguin, a small and remote island province in Mindanao. A community-based project there resulted in reduced risk and that served as an incentive to the local government to extend work on DRR. A project focusing on five municipalities initiated by a national NGO in partnership with the province in 2002 provided the local government an opportunity to appreciate the value of disaster risk

⁵ 'Civil society organisation' is a broad category that subsumes everything from social movements, international non-governmental organizations (INGOs) and very local community-based organisations, as well as academic and professional institutions, the media, etc. NGOs ('non-governmental organisation') is sometimes used synonymously; however, here we use NGO to denote national or sub-national, membership based not-for-profit organisations active in DRR related areas.

reduction that involved participation of the communities. The project trained provincial and municipal officials and community people in DRR and participatory risk assessment. As a result of this project, community leaders and local officials had the opportunity to participate in some national meetings to present their achievements. They were encouraged through positive feedback from other NGOs and the national government. Two *barangays* (municipalities) involved in disaster preparedness training in the project area were recognized and awarded the title of second and third ‘Most Prepared *Barangay*’ by the Provincial Disaster Coordinating Council.

This initial project inspired another project implemented in 2005 on non-structural disaster prevention funded by Japan International Cooperation Agency (JICA) that focused specifically on flash flooding and debris flow disaster prevention. Subsequently a typhoon passed with no casualties, which was the target of the island’s disaster preparedness plan. Within the implementation of the JICA-funded study, local government personnel used the participatory and development-oriented framework learned in the first project to make DRR measures more relevant and appropriate to Camiguin’s situation and needs.

Bangladesh (lead author Brian Cook)

A positive feedback loop is also evident in the case of Bangladesh. Success in reducing lives lost in cyclones and floods has increased government commitment to increasing DRR efforts. Success seems to motivate further success. As in the Philippines case just discussed, success provides political advantage, hence is a strong incentive.

In Bangladesh, there is no lack of will or motivation for DRR. The diversity and high rate of disasters, the large number of people at risk, and the negative influence on economic and social development each contribute to widespread acceptance that Bangladesh has no choice but to ‘mainstream’ efforts to reduce impacts (Brammer 2004). For example, the opening sentence of the recent National Plan for Disaster Management (NPDM) (Government of Bangladesh 2010: 1) declares:

‘The government acknowledges the need for pre-disaster mitigation and preparedness of the people, as opposed to the earlier concepts of responding after a disaster has taken place, as a necessary as well as a cost-effective approach’.

These views are, indirectly, supportive of claims that DRR is worthwhile. An impoverished nation grappling with multiple debilitating challenges views DRR as a method of improving resilience, which in turn strengthens socio-economic development. For Bangladesh, the will to act is not lacking, but the structural processes that inhibit implementation are significant.

Bangladesh will experience another preventable catastrophe. Despite its progressive policies, determined efforts, and adaptive and resourceful population, there will be death and destruction on a scale that no longer appears possible in the developed world. Like

the floods of the late 1980s and the 1991 cyclone, such an event will prompt fundamental action (Haque *et al.* 2007). It will be in the short period following that event that the will to overcome the structural barriers will emerge (e.g. resource limitations, regional competition/co-operation, corruption, exploitative relations). Whether the shift toward comprehensive disaster management and/or efforts to engender all ministries with a risk reduction ethos will be effective is unknown.

One answer to the question of ‘what processes generate the political will to implement DRR?’ is that in Bangladesh it was neither a top-down nor bottom-up argument or logic, but a collective disgust with the repeated impacts of catastrophe, hence to some degree a moral incentive as well as political. Unfortunately, this may be the most effective means of prompting systems to discard existing practices, even when it is clear that the changes will be more effective, efficient, or equitable. If there is a lesson to be shared from the Bangladeshi experiences and successes, it is the tragic need for catastrophe to dispel complacency and for there to exist options when systems are forced to evolve.

Indonesia (lead author Jonatan Lassa)

Indonesia is disaster prone, as recent large scale disasters such as the Indian Ocean tsunami in 2004, the 2006 Jogjakarta earthquake⁶ and 2010 Merapi volcano eruption.⁷ In contrast to the general perception that Indonesia’s reform of disaster risk management (DRM) in 2007 was forced by the frequency of such natural events, the reform (or, the political will for the DRM reform) actually resulted from the interplay of several factors. The Hyogo Framework for Action provided a push for reform. This coincided with both the UNDP and Indonesian civil society agenda(e.g. Indonesian Society for Disaster Management, known as MPBI). MPBI is a hybrid NGO (comprises of UN staff, government officials, NGOs activists and academics) based in Jakarta which lobbied the national legislature to draft a disaster management law (Haynes *et al.* 2010).

At the local level, civil society organizations (CSOs) have played roles as ‘quasi-parliamentary’ as they have been the drafters for local DRM regulations, training for local governments and local politicians to draft good DRM regulations and facilitators for DRM knowledge at the local level. Therefore, the disaster management policy reform in Indonesia has been a result of a coupling process: the dynamic context where recurrent catastrophic events provide opportunities for the (domestic actors inside and outside of) government to review its existing policy combined by international processes and platforms such as the bilateral and multilateral aid institutions that encourage the government and the non-state actors in general to change.

⁶ Yogyakarta earthquake caused 157,000 housing unit completely destroyed by in May 2006. This does not include the 202,000 units that suffered some damage – See <http://www.adb.org/documents/reports/damage-loss/chap2.pdf> (Accessed on 30 March 2010).

⁷ Merapi Volcanic eruption (26 October – 19 November 2010) caused more than 200 casualties and more than 350,000 displaced people Source: First Briefing Notes Forum PRB, 18 November 2010 Emergency needs for Emergency response: Merapi Volcano Eruption 2010 page 1-2.

Certain provinces and cities preferred to use the Anti-Corruption Law 1999 to safeguard their disaster management vision as the law is captured in the local regulation. For instance, three out of 15 local regulations analysed by Lassa (2010) show that local DRR stakeholders in some province and district have referred Anti-Corruption Law 1999 as part of local DRR regulation (e.g. East Nusa Tenggara Province, Sikka district and Bojonegoro district).

DRM reform in 2007 eventually led to an increase in the DRR budget. The total budget commitment increased from 433 million during 2007-2009 to 4.5 billion US Dollars during 2010-2012. However, as is common all over the world, there is volatility in the political will towards pre-disaster investment (Lassa 2010). Actual spending for 2007-2009 showed that 79 per cent has been spent for post disaster intervention and there is still only marginal commitment in the rest of HFA priorities especially in the DRR education and disaster mitigation.

India (lead author Mihir Bhatt)

Economic incentives for DRR at the community level are scattered, uneven, often conflicting, unsustainable and top-down. In contrast, what communities want are incentives which are consolidated, even, harmonized, sustainable and lateral (mutual).

Examples come from the work of Concern Worldwide in India (CWI), including its encouragement of DRR activities since the Gujarat earthquake in 2001. CWI has twenty-six local partners spread across six Indian states that are highly prone to hazards: Gujarat, Orissa, Tamil Nadu and Bihar. Typically, stone embankments may be built in a village by the Flood Management Authority on a river bank to stop flood water from flowing into the village, but no economic incentives are available to individual villagers to enhance the plinth height of their homes (flood proofing) or to dig water harvesting structures to guard against droughts that also occur in the village. In one district in Orissa, twenty villages were included in DRR measures under a UNDP-funded project but the remaining villages were left out. Thus, they lacked that particular set of economic incentives for undertaking local measures. Such is the nature of unevenness of incentives at the local scale.

The unevenness of economic incentives is also seen in different magnitudes of payment for the same or similar measures. During field work the lead author found that one NGO paid Rs.12,000 per stone and wire 'box' constructed on a river bank to divert the flow of floods and another paid Rs.8,000/- for the same box in another location. Often incentives are latent and not articulated across communities and interest groups. Incentives are present as hidden opportunities to enhance safety, to obtain more income, to build new assets or to protect a family. The scale of incentives is often not known by the community nor whether the incentive will come in cash or in-kind is not clear in advance.

Incentives are almost always used in pilot projects by an outside agency but are not sustained (or sustainable). By the time a community comes to know about the incentive, it has been changed, modified or withdrawn. For example, incentives to set up community-based DRR committees after the Indian Ocean tsunami did not spread to states unaffected by the tsunami or, within Tamil Nadu, to non-tsunami affected districts. The broader issue here concerns subsidies. Almost all economic incentives take the form of subsidies, and one must always ask, who pays and who

benefits? In large countries such as India, risk may be shared among a large population, and, as in the example of the United States (below), taxpayers in states affected by an earthquake are willing to pay for government investments in flood control or coastal storm protection because other flood-prone or storm-prone states unaffected by seismic hazards are willing to cross-subsidize investment in seismically safe infrastructure.

An additional problem is that a given incentives may conflict with other DRR incentives or development incentives. For example, an incentives in the form of subsidised fertilizer clashes with the incentive to use drought resistant local crops. Maximum benefit from fertilizer comes if they are applied to crops that have been bred to respond to such an input (e.g. hybrid, not local seed). Incentives for crop insurance displace use of crops that have low yield but are resistant to heavy monsoon rain.

This raises the wider issue of endogenous versus exogenous innovation. Currently incentives come from the top down. By contrast, lasting incentives could be local, offered by one community to another to minimize the risks they face. For example, communities may plan for the use of food on both sides of potentially flooded areas to avoid loss of food due to flood. This works to the advantage of communities on both sides. The incentives are mutual.

United States (lead author Ben Wisner)

In the United States politicians are not usually rewarded for DRR by the electorate; whilst they may be punished for perceived failures to respond adequately with relief and recovery assistance, depending on the time from the disaster to the election. The political fall out from Hurricane Katrina is a good contrast. New Orleans' mayor was re-elected by a narrow margin in May 2006. Meanwhile, Katrina was one of several factors contributing to the electorate's disillusionment with President Bush. Politicians seen to deliver disaster recovery effectively tend to be rewarded by voters. The recognition amongst US politicians that bringing in money can win votes means that state governors can be quick to make a disaster declaration and a president is equally generous in his presidential disaster decrees. These legal steps provide access to federal funding for relief and recovery (Healy and Malhotra 2009).

By contrast, the Clinton Administration's investments in DRR were not widely known or praised by the media and general public. Learning lessons from Hurricane Andrew in Florida in 1992 and the large Mississippi-Missouri River floods in 1993, the government shifted the work of the Federal Emergency Management Agency (FEMA) to emphasize prevention and reduction in potential losses. FEMA also developed partnerships with the Environmental Protection Agency, Department of Energy and other agencies so that the approach to recovery and loss reduction could be more comprehensive. Unfortunately, success of such an approach is measured as disaster losses NOT incurred, and the absence of a crisis or loss does not grab headlines or win votes.

Economic incentives are also evident in U.S. disaster policy. The National Flood Insurance Act has been revised so that property owners living in flood plains are not eligible for repeated claims and must eventually accept a government buy-out and move from the flood prone area or lose their flood insurance (King 2005).

Peru (lead author Allan Lavell with Lizardo Narvaez)

Since 2007, disaster risk analysis is a formal requirement in any public sector pre-investment planning process at all administrative scales in Peru. This decision is the result of a process that commenced in 2001 and that has been promoted by a key group of high level technical professionals, as opposed to elected authorities. Progress and consolidation has also been achieved by overcoming of severe early opposition (2002-2005) from within the upper hierarchy of the military-dominated national Civil Defense System, where ‘development-based risk reduction’ was originally considered contrary to the ‘doctrine of civil defense’. After 2005, Civil Defense began to accept the development-based risk management paradigm with important gains in terms of coordination and agreement with development based actors. The narrative that follows highlights the role of administrative and professional incentives in overcoming preconceived ideas and negotiating a reallocation of administrative jurisdiction and power over aspects of disaster risk reduction.

In 2000, the Andean Development Corporation, an agency of the Andean Community, promoted a disaster risk reduction promotion programme called PREANDINO whose main objective was the introduction of development-based disaster risk reduction initiatives in planning and development institutions in the Andean countries. In Peru, the focal point for PREANDINO work was the very high level Presidency of the Council of Ministers (PCM) under the leadership of an economist expert in investment planning who, along with her staff, was charged with providing technical advice on disaster risk reduction (DRR) to the National Public Investment System (NPIS). By August 2002, a multi-sectorial commission had been established in the PCM in order to discuss and promote development-based DRR. It had representatives from different line sector agencies, international agencies and NGOs. The NPIS, the German GTZ and PREDES, a leading Peruvian NGO specialised in disaster work, were amongst those represented. This new commission attempted to implant an inter-sectorial view of the problem of disaster in Peru recognizing that disaster risk is constructed within and by society through different forms of land occupancy and land use. This quickly led to a realization of the need to consider risk analysis in the pre-investment phases of public investment.

Official opposition to the commission was expressed by the national civil defense authorities who strongly argued that there was a duplication of their role and function in the disaster area, and the commission was rapidly disbanded but not without having left its mark and the clear message that sustainable development would only be possible if disaster risk reduction is part of the formula.

Following on from this brief experience in social networking, the head of the NPIS was instrumental in promoting the DRR theme within the Ministry of Economy and Finance and a continued inter-institutional dialogue was set up and stimulated by him through a ‘promotion group’ which, despite its informal nature, generated the most important space for discussion and collective analysis on the topic of disaster risk and development in Peru. It was in this context that the head of the NPIS moved to transform discourse into

practical action, now fully under the responsibility of the NPIS because public investment matters were ‘out of the reach’ of the National Civil Defense System.

Conceptual consistency and homogeneity prevailed in the whole process and have been considered one of the major reasons for the success of the initiative over time. Between 2002 and 2006 conceptual and methodological guidelines were developed for the process of pre-investment disaster risk analysis (Campos and Narváez 2010). Since 2007, and faced with the difficulties of commencing activities through the Centre for National Strategic Planning, the government agency that should integrate risk considerations into development plans, the Ministry of Economy and Finance, through its Directorate General of Multi-Annual Planning has constantly promoted the use of methodological guidelines for the incorporation of risk analysis in public investment projects. Since then the use of risk analysis in pre-investment processes at national, regional and local level has been standardized and is obligatory for both new and revised development projects. Nowadays the methodological guidelines, along with norms from the Ministry of Housing and Ministry of the Environment (relating to urban and regional development plans) are the principle development management plans available for the incorporation of risk analysis in Peru.

Between 2006 and 2010 close to 1,000 technical staff were trained in the use of pre-investment disaster risk analysis techniques, 25 projects had been submitted to risk analysis developed using workshops and technical advisory schemes and 18 research projects were promoted in universities on the risk analysis theme. The methodological guidelines developed and published by the MEP are now used constantly by the Swiss Cooperation-COSUDE and NGOs like PREDES. The experience gained in Peru has been introduced into other Andean countries and to Guatemala and Costa Rica in Central America, with GTZ support.

Costa Rica (lead author Allan Lavell)

Professional ethics loom large as an incentive in the case of the Costa Rican Social Security System (CRSSS) Hospital Retrofit Programme and a parallel reform of the insurance programme for Costa Rica’s hospitals and clinics. Individual policy entrepreneurs or ‘champions’ were fundamental in these cases (Lavell 1994). While political and economic arguments were used by key actors in arguing for seismic retrofit, the role of professional ethics and moral judgment cannot be denied.

Several disasters provide the background for the awareness on the part of key professionals that change was necessary: a 1982 fire in the Costa Rican social security systems’ warehouses and the 1983 San Isidro, Costa Rica earthquake as well as the 1985 Mexico City and 1986 El Salvador earthquakes and their impacts on hospitals. The retrofit programme was a collective, social response to these events and the ways they impacted differentially on the conscience and practice of key technical staff and policy actors and entrepreneurs. The process took four years to mature commencing in 1982 with the warehouse fire and reaching maturity in December 1986 when the CRSSS approved finance for the retrofitting of three of its major hospitals.

The successive Mexico City earthquake caused damage to hospital structures built using the same technique employed in Costa Rican hospitals built since 1962. In 1962-63 the country had commenced construction of its flag ship hospital, the 'Mexico Hospital'. The plans and technical support for construction had been a donation by the government of Mexico. The techniques used were the same as those used in the Medical Centre in Mexico City which fell with the quake in 1985 and killed hundred persons. The head of the architecture department at the CCSSS in 1983 had been a chief advisor in the construction of Costa Rica's 'Mexico Hospital' and had come to Costa Rica financed by the Mexican government. He stayed on after and was the chief architect in a number of new hospital schemes constructed in Costa Rica from 1963 onwards, all using the so called Mexican construction model.

The damage in 1983 to the San Isidro Hospital in the south of Costa Rica, combined with the later impact of the 1985 Mexican and 1986 Salvadorean earthquakes led to a series of studies and finally the decision to retrofit Costa Rica's hospitals.

Albert Linner, the head of the architecture department at the CCSSS, along with the head of the engineering department, was the principle dynamic element in the decision, backed by the technical reports from consultant engineers. Linner was moved by what he referred to in interview an interview with the lead author as 'the need to clear ones conscience'. As designer of many of the major hospitals he understood the moral, ethical and professional imperative of righting a major, unforeseeable technical flaw in the design.

The Minister of Health at the time of the decision to retrofit was Dr Edgar Mohrs. He had previously been Director of the National Children's Hospital. From 1983 onwards he had asked for studies on the hospital in the wake of the damage that occurred to the San Isidro hospital. He was fully cognizant of the potential significance of this for the flag ship children's hospital in the country. He gave his constant support for the retrofit programme. Guido Miranda was President of the CCSSS at the time and an eminent medical doctor and politician who had overseen the creation of the CCSSS and the purchase of private hospitals. He also the financial and human risks associated with seismic insecurity. It was the interaction and synergy between these individuals and the structural engineers and their motivations that led to the decision to retrofit at the end of 1986.

The first stage of the retrofit programme ran until the early 1990s during which time the 'Mexico Hospital' and the National Childrens hospital in the capital, San Jose, and the Monseñor Sanabria hospital in Puntareanas on the Pacific coast were retrofitted successfully. Since then many other hospitals and clinics have either been replaced as in the case of Alajuela or retrofitted as in the case of Cartago. The retrofit programme fitted with the philosophy and practice encouraged by the Pan American Health Organization's health centre preparedness programme in Latin America which from the late 1970s had promoted numerous schemes for disaster preparedness in the health sector.

Colombia (lead author Omar-Dario Cardona)

Administrative and economic incentives seem to have been largely responsible for Colombia being a leader in DRR. Top-down mandates and support for municipalities have increased compliance and local implementation of national laws and standards. The introduction of land-use planning in Colombia gave rise to the integration of risk reduction into territorial planning under Law 388 of 1997. A number of cities and municipalities are carrying out risk management in a sound and even exemplary manner. In many cases, detailed disaster risk mapping and risk assessments have facilitated effective decision-making. Cities such as Manizales, Pereira and Medellin have developed housing relocation and environmental projects, which include well-implemented mitigation efforts through activities coordinated with the community. In Bogotá, numerous programs for the water, energy and natural gas networks, as well as for municipal entities such as the secretaries of health, education, planning and the institute of urban development, among others, have led to significant investments for risk reduction in schools, hospitals, and bridges.

However, unfortunately, the vast majority of smaller municipalities have failed to consider efficiently risk in their development plans. The location and expansion of urban centres in areas at risk is one of the most significant sources of disaster vulnerability in Colombia. The Ministry of the Environment, Housing and Territorial Development and the National Planning Department have recently taken steps to address this problem. New policies to support intervention in risk areas, including the resettlement of vulnerable populations, are being prepared. The use of subsidies as an economic incentive are being considered to encourage the retrofitting of existing houses and housing construction in risk-free areas. A new guide on the integration of risk into land-use plans has also been published in order to assist municipalities, and will supplement the documentation published since Law 388 of 1997. But much more remains to be done if the country's exposure is to be significantly reduced. It is critical to address budgetary constraints that have been a serious limiting factor in this sector.

The experience of national agencies as well as that of the cities of Bogotá and Manizales includes the use of risk transfer instruments to protect public infrastructure and the promotion of collective insurance of private assets. Innovative mechanisms have also been used to subsidize the coverage of the poorest socio-economic strata. Although efforts have thus far been limited to pilot programs, these early examples demonstrate that the country would greatly benefit from renewed efforts to reduce and cover at least part of its financial exposure. Extension and full implementation of these programs would require the committed participation of the Ministry of Finance and Public Credit to the development of an effective financial protection strategy for both national and local governments.

DISCUSSION

The Role of Standards

Standards and codes may be international, national, provincial/district or local. They have different degrees of force. Some are merely guidelines which may, or may not, have the official status of professional norms (say of national or international engineering or other professional bodies). Some are rigid and detailed but are entirely voluntary, with those adhering to them garnering a label or status recognising adherence to the code. Others such as building codes may have the force of law regionally, nationally or locally. The more widely understood, the more influential they can be, whatever their legal status or professional credibility. Advances in road and traffic safety, air safety and some public health standards provide good examples. Also, their effectiveness is enhanced where they are tied operationally to performance reviews (see the South African case above).

On the whole, standards are conceived, written and codified as technical recommendations or requirements depending in part on the authority of the issuing agency. As such, they tend to be dry and confusing to the public. However, the same standards can be reconceived and rephrased as part of a rights-based system (see Box 2). People should have clearly articulated rights, described in terms of standards. Particular bodies, the duty bearers, should have clear obligations to ensure that those rights are realized. Agents of accountability use those standards in calling the duty bearers to account. In this way it is easier to communicate the importance of standards to the public and to generate and to maintain public interest in them.

Articulating and supporting rights, though, should never preclude a balancing approach of duties and responsibilities. That is, citizens have specific rights that governments should uphold, but citizens also have duties and responsibilities that they are bound to uphold. In terms of DRR, those who demand the right to protection and relief from disasters should indicate what duties and responsibilities they will undertake within their own communities, even if requiring external resources and support, in order to ensure that they also contribute to upholding their own right.

Box 2: A Rights Driven Approach

George Kent, University of Hawaii

Perhaps the best way to bring coherence to the incentives would be to establish rights-based systems of DRR, globally and within each country. These systems would require articulation of the rights that people have with regard to DRR. They would say not only who has what rights, but also who has what correlative obligations, and what mechanisms of accountability are established to ensure that these duty bearers carry out their obligations to the rights holders.

While there can be many different mechanisms of accountability, the most fundamental is that available to the rights holders themselves. Individuals with inaccessible entitlements should have institutionalized means available to them for pressing their claims. The

remedies or ‘recourses’ available to rights holders are essential elements of any properly functioning rights-based system.

These rights could be stated in terms of broad principles in an international agreement. They would then be translated into concrete entitlements in national law by those countries that sign and ratify the international agreement.

The primary emphasis should be on the obligations of national governments to their own people, but attention should be given to external obligations as well. What are the obligations of the global community to people in countries that fail to protect them adequately, for whatever reason?

This approach could be undertaken in the framework of international human rights law (see ‘Legal Incentives’ above).⁸ Currently, that law does not explicitly address the right to protection and relief from disasters, but this is clearly implied. Article 3 of the Universal Declaration of Human Rights says, ‘Everyone has the right to life, liberty, and security of person’. Article 25 says, ‘Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, or old age or other lack of livelihood in circumstances beyond his control’ (UN 1948). These rights are further elaborated in subsequent human rights agreements, particularly the International Covenant on Economic, Social and Cultural Rights.

A new global treaty could be centred on the definition of disaster provided by the United Nations International Strategy for Disaster Reduction:

‘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’ (UNISDR 2006).

There are several guidelines, codes, and standards other than human rights law that could serve as sources for the framing of rights, and also to assist in the interpretation of human rights in particular. These include, for example, the Code of Conduct of International Red Cross and Red Crescent Societies (IFRC 2011), the Sphere Project’s proposed standards for humanitarian assistance (Sphere Project 2010), the Good Humanitarian Donorship Initiative (2011), and others. There are also many disaster-related standards set out at national and sub-national levels.

Unlike human rights law, these standards are not rights-based. They are not based on the idea that individuals are entitled to particular kinds of services, should know the standards, and should be able to call the duty bearers to account through designated institutional arrangements.

⁸ See also Kent (2001); Kent (2010); Kent (2011).

Some of the standards could be readily adapted to support a rights-based approach. For example, the Inter-Agency Network for Education in Emergencies sets out standards for education in emergencies (INEE 2011). It also works to let people with disabilities know about these standards. It would be only a short further step to say that people with disabilities in emergencies have specific rights to education. Where the Sphere Project says that disabled people should be treated in a particular way, one could instead say disabled people should have a right to be treated in that way. This could be tied to provisions in the Convention on the Rights of Persons with Disabilities (UN 2006).

World Disasters Report 2005 examined the importance of information before, during, and after disaster events. It could be established that people have a right to specific kinds of information in specific forms (IFRC 2005).

Too often, disasters are treated as if the current example was the first one. Unfortunately, disasters are relatively common and have had a long history of shaping society and governance; there is a need to learn from these experiences and to articulate people's rights and the obligations of governments under such circumstances. Rights-based systems, globally and nationally, could help to bring order to the entire structure of disaster risk reduction.

Box 2 Ends

The Role of Civil Society Organizations (CSOs) and the Media

National and international networks, social movements, and civil society organizations can play a role in advocating for the implementation of standards and in judging the performance of government and the civil service. This role can play out in a highly local manner, by lobbying local government, for example. Some civil society organizations act on national and global scales, as in the case of the 'Views from the Front Line' survey conducted in 2009 (GNDR 2009). That survey is underway for a second time with a focus on local risk governance. Another example is DARA, which publishes the yearly *Humanitarian Index Report* (<http://daraint.org/>).

While there are an increasing number of specialist CSOs or larger international NGOs with specialist departments dealing with DRR or the monitoring of DRR and humanitarian assistance, these alone are insufficient. Their limited effectiveness points out, as does the performance of similar specialist departments in the public sector, the fallacies of dealing with DRR (a) outside the context of development and (b) without dialogue with the private and public owners and operators of social and economic infrastructure. Alliances are required among organizations working on DRR, environmental protection, climate change, poverty, social justice, economic and human rights and globalization if a critical mass of social demand is to be expressed.

Some CSOs are the unmatched representation of 'participant-observer' when it comes to DRR. They are simultaneously identified with community, with the vulnerable, with the stakeholders, with the foremost local risk reduction actors, and they are concerned with governance, transparency, responsibility and accountability. The important role of CSOs was emphasized in

the Philippines case study above. They are capable of monitoring and evaluating progress of DRR in the course of work on community-based development and with community-directed development. Yet neither individually nor collectively do they include the entire community, vulnerable populations, all stakeholders or local mitigation actors. This is their weakness and limitation, one they must constantly struggle to overcome (Thompson 2011).

Another condition for effective expression of social demand is a free and responsive media. The second adjective is critical. Many print and electronic journalists are ill-informed about DRR and still accept the myths and stereotypes that prevailed decades ago (e.g. disaster are 'acts of god', people are passive 'victims', people panic and loot and society crumbles in the event of a disaster, etc.). As well, many media outlets exist purely for profit—even putting accurate information and social responsibility well below the need to generate profit. These factors can lead to pressure from editors to report quickly and focus on drama: body counts, destruction and stories tugging at heartstrings. There can be very little professional incentive within journalism to follow up with in-depth analysis of the political, economic and other non-natural causes of disasters. Instead, reporters are expected to jump from crisis to crisis, generating revenue for media conglomerates being the primary objective. Responsive and responsible media should be supported to conduct in-depth reporting of disasters and DRR beyond the immediate catastrophe (Radford and Wisner 2011).

The most effective 'entry point' for raising the profile of DRR is when and where disasters strike. In the BBC coverage of floods in Australia, Brazil and Sri Lanka in January 2011 several reports specifically discussed what could be done to reduce the impact of future disasters.

The Role of the Private Sector

As with CSOs and the media, national and international companies can play a negative or positive role. Where election campaigns are largely funded by corporate donations and there are strong private sector lobbies involved indirectly in the drafting of legislation and implementation of policy, the power of political (electoral) incentives may be diluted. For example, if logging companies support a political candidate, they may expect lenient enforcement of forestry regulations, and this, in turn, may result in increased flood and landslide hazard. Alternatively, socially responsible corporations may add to the economic incentive for DRR by working in partnership with government. For instance, experiments with agricultural and livestock insurance schemes in a number of countries are based on partnerships between governments, insurance and reinsurance companies and international organizations.

The private sector wants a stable business environment that minimizes a wide variety of risks to themselves (from political and financial to those involving the built and natural environment). They are, in that sense, natural allies of government and civil society in the promotion of DRR. Some may see as an instance of corporate social responsibility, which in one sense it certainly is. Self interest may also be the driving force; however the economic calculus of a large corporation with interests in many countries may work on a spatial and temporal scale that is quite different from those that structure risk-oriented decision making by governments, small firms and members of the public.

Box 3: A Case of Private Sector Initiative

Terry Gibson, Global Network of Civil Society Organizations for Disaster Reduction

A large multinational corporation, SAB Miller, is made up of a number of semi-autonomous operating companies that can therefore respond in their local contexts. Their Honduran company, *Cerveceria Hondurena* has made substantial investments in a range of social responsibility initiatives, which include a tree nursery and planting programme which has been responsible for twelve per cent of the afforestation work in the country (Cervecería Hondureña 2011; also personal field observations by the box author). This is a strategic activity for insuring that storms like Hurricane Mitch cause less damage in future. Why do they do this? The drivers appear to include the personal commitment of the local staff, support of the corporation for social responsibility activities and a recognition that a more stable and sustainable society is a better marketplace for their product - beer!. This example suggests that both corporate strategy and personal motivation can play a part in corporate engagement with DRR.

Box 3 Ends

While some companies are inherently motivated to support social and environmental stability, there are others that profit from activities that increase people's vulnerability to hazards. Examples are developers who build and abscond, polluters who lobby against more stringent controls or who bypass laws, farmers and ranchers with little interest in averting floods or droughts downstream from their land and mining companies which devastate the land and do not manage their waste properly. Their short-term economic incentives (often in addition to their close political association with nationally or locally powerful people) tend to create disaster risk and usually lead to them accruing profits far away from the locations where they choose to accumulate risk and vulnerability. The classical example is the factory that pollutes downstream villages while the owners live upstream.

One also needs to ask about the role of the insurance sector is for DRR. In addition to the micro-insurance schemes mentioned earlier, big re-insurers and their partners do a positive service by providing public domain data and results of their research. However, how much should they be forced to open up their databases and methodologies for assessing risk and calculating premiums? Could this proprietary information permits DRR and company activities to be closely aligned? How much does competition among insurance companies and the secrecy surrounding their risk assessment methods make public sector DRR more difficult? Furthermore, they need to develop more products that motivate people and countries to invest in DRR (examples of such instruments exist both at macro and micro levels, but they are still the exception).

The Role of Professional Organizations, Training and Higher Education

Administrative incentives have a stronger basis when DRR is taught in various professional courses (public administration, planning, architecture, engineering, public health, etc.) and, where it exists, in the formal training of civil servants (such as in the Indian Administrative Service). The role of professional associations has already been mentioned in relation to the development of standards. Architects, planners, engineers, health workers, social workers,

veterinarians and many other professionals and their associations can play a role in communicating and interpreting these standards to the public and to the media, and to government entities and the private sector.

With an explosion of higher education across the globe – much of it private – there is now the real possibility that adaptive research of locally relevant technologies for DRR (i.e. knowledge exchange, grassroots planning, warning systems) can be conducted in areas formerly isolated from urban universities or reliant on imported knowledge from elite, metropolitan centres of higher study. Distance learning and south-south exchange of knowledge and experience can play a major role as well, thus fulfilling capacity building and career development aspirations of a new generation of DRR workers.

The Role of the ‘Champions’ and Leadership

The World Seismic Safety Initiative (WSSI <http://www.wssi.org/>) has had success enlisting country presidents and other high officials as champions of seismic safety. The annual Sasakawa prize has sometimes gone to political leaders (<http://www.unisdr.org/eng/sasakawa/sk-about-eng.htm>). Passage of legislation and creation of new DRR institutions are important, but these are far more effective if high national leaders take a continuing interest and carry out a watching brief over implementation and results. By itself, however, leadership is insufficient unless it is sustained by effective social demand for risk-aware development and development-focused DRR.

As well, humanitarian efforts seem to have no shortage of champions. It is encouraging to see film stars become humanitarian representatives while music stars donate their time to raise money for humanitarian efforts. After the January 2010 earthquake, Haiti had no shortage of—and desperately needed—champions for aid and reconstruction, including Canada’s former Governor-General, rap star Wyclef Jean and former U.S. President Bill Clinton. Champions presenting an outpouring of support and fundraising for DRR, and personalities engaging in politics on behalf of DRR, would be welcome *before* a disaster strikes and not, as usual, after.

CONCLUSIONS

Political will is the result of the confluence of a number of incentives – political, economic, legal, administrative and moral/ethical. These incentives interact, overlap, interpenetrate and reinforce each other. Their labels represent ideal types that in reality are seldom found in ‘pure’ form.

The ten case studies above suggest that political incentives are strongest. Governments address disaster risk when popular pressure and political reforms have made local authorities more accountable and responsive to their citizens. This includes local governments that develop relations with those who live in informal settlements and develop the capacity to govern with, and for, them (IFRC 2010). In these situations civil society can play a key intermediary role towards building good relations between local government and low-income citizens. Social demand for DRR is a critical requirement. This bridging function is particularly important as the high level decision makers are often disconnected from the local level and therefore lack

information and understanding of both the 'why' and the 'how' of effective DRR.

Economic and administrative incentives are also evident in a combination that produces sustained political will. Although there is considerable potential in a rights-based approach, so far legal incentives have had less to do with rights and more to do with compliance with externally mandated standards such as building codes.

The role of ethical and moral incentives is hard to distill from the case studies on hand except in the case of Costa Rican hospital safety; however at least at the local scale, the growth of volunteerism and the care shown to people who suffer from a hazard suggests that the world's various faith traditions and local moral codes have some effect on behavior. Professional ethical standards also should not be disregarded as a source of motivation. Why else do 'whistle blowers' turn up regularly to denounce this or that corrupt building practice or safety failure by government agencies?

Political will is often volatile and DRR investment in economic terms is also volatile. Therefore, the roles of watch dog organization are crucial to make sure that there is political will at all levels of governance to safeguard implementation.

RECOMMENDATIONS

UN, International and regional organizations should:

1. Codify DRR standards so that specifics exist to be implemented, monitoring and enforced with graduated sanctions where that does not happen.
2. Establish institutional arrangements for enforcing standards, with measured sanctions applied in cases of violation of the standards.
3. Support the creation of an international treaty that specifies the human rights obligations as they relate to disaster, both in terms of risk reduction and in terms of post-disaster obligations.
4. Support the development of national law to establish specific, locally appropriate entitlements and accountability mechanisms based on human rights principles.

Civil society and social movements should:

1. Demand DRR from government, but do not be afraid to bypass government if that is necessary.
2. Try to convince all parties (government, donors, UN and international agencies) that the amount of attention, money and other support for post-disaster activities should be matched in pre-disaster activities. It would also be a mistake to neglect response and recovery for the sake of DRR.

Media should:

1. Report in depth on the root causes of disaster, highlighting bad practice by government and other actors at all levels.
2. Report on successful risk reduction, highlighting good practice by government and other actors at all levels.

Donors and grant makers should:

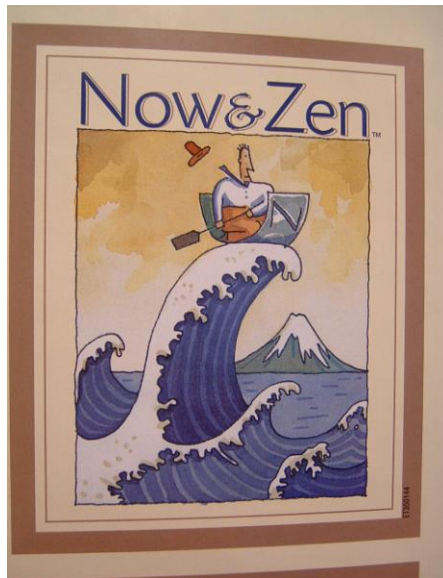
1. Ensure continuing, substantial support for DRR as a large percentage of assistance provided for preparedness and recovery, and for development assistance.
2. Endow and award prizes for good governance and for community/ local government partnerships in DRR.

Professional associations, teachers and researchers should:

1. Highlight positive case studies to indicate how transferable aspects could be transferred, while noting that not all aspects can or should be transferred.
2. Create and periodically revise technical standards and monitor their application to ensure they are well known, understandable and feasible.

Governments should:

1. Invest in multi-stakeholder policy platforms to build relationships between national and local actors. Governments need to provide explicit support favouring local level actors who are otherwise functionally excluded by geography, language, etc.
2. Implement DRR measures from a human rights-based perspective, in consultation with the affected population, and in coordination with existing legal obligations to respect, protect and fulfil human rights.
3. Balance and integrate rights with duties and responsibilities to ensure that everyone understands what they are expected to do with regards to DRR.
4. Pursue economic incentives for DRR within local government through financial audit reporting, system-wide performance measurement and the evaluation of political office bearers and civil servants.
5. Implement deconcentration and decentralisation seriously, including provision of necessary finance, staffing, training and technical support – as opposed to mere formal, name-only gestures.



REFERENCES CITED

Bechtel, M. M. and Hainmueller, J. (2010) 'How lasting is voter gratitude? An analysis of the short- and long-term electoral returns to beneficial policy', Federal Technical Institute, Zurich, Online, Available HTTP:

<http://www.ib.ethz.ch/people/mbechtel/box_feeder/elbe_wn.pdf> (accessed 29 January 2011).

Botha, D., Van Niekerk, D., Wentink, G., Tshona, T., Maartens, Y., Forbes, K., Annandale, E., Coetzee, C. and Raju, E. (2010) *Disaster Risk Management Status Assessment at Municipalities in South Africa*, Draft Report. Pretoria: South African Local Government Association (SALGA).

Brammer, H. (2004) *Can Bangladesh be protected from floods?* Dhaka: University Press.

Campos, A. and Narváez, L. (2010) 'Estudio sobre la implementación de estrategias para incorporar criterios de gestión de riesgo en la Inversión Pública en América Latina', Working Paper, Miami, FL: Florida International University.

Carmalt, J. and Haenni Dale, C. (2011) 'Human rights, disasters and state obligations', in B. Wisner, J.C. Gaillard and I. Kelman (eds) *Handbook of Hazards and Disaster Risk Reduction*, London: Routledge, in press.

Center for Disaster Preparedness (CDP) (2005) *Enhancing LGU Capacities in Disaster Preparedness, Prevention and Rehabilitation*, Final Report to Local Government Support Program, Manila: CDP.

Cervecería Hondureña Online, Available HTTP:

<<http://www.cerveceriahondurena.com/>> (accessed 17 January 2011).

Gaillard, J.C. and Texier, P. (2010) 'Religions, natural hazards and disasters: An introduction', *Religions* 40, 2: 81-4.

Good Humanitarian Donorship Initiative (2011) *23 Principles and Good Practice of Humanitarian Donorship*, Online, Available HTTP: <<http://www.goodhumanitariandonorship.org/gns/principles-good-practice-ghd/overview.aspx>> (accessed 29 January 2011).

Government of Bangladesh (2010) *National Plan for Disaster Management*, Disaster Management Bureau, Disaster Management & Relief Division.

Haynes, K., Lassa, J., Tower, B. (2010) 'Child centred disaster risk reduction and climate change adaptation: roles of gender and culture in Indonesia', WP 2, Children in Changing Climate and Institute of Development Studies, UK.

Haque, C. E. and Etkin, D. (2007) 'People and community as constituent parts of hazards: The significance of societal dimensions in hazards analysis', *Natural Hazards*, 41, 2: 271-282.

Healy, A. and Malhotra, N. (2009) 'Myopic voters and natural disaster policy', *American Political Science Review*, 103, 3: 387-406.

Hoogstad, W.J. and Kruger, C. (2008) *The Link between Development Planning and Disaster Risk Management in Selected Municipalities*, Research Report to the South African National Disaster Management Centre, Potchefstroom: African Centre for Disaster Studies.

Hoover, M. (2005) 'Rowboat federalism: The politics of U.S. disaster relief,' part 1, November & part 2, December, *MRzine*, Online, Available HTTP: <<http://mrzine.monthlyreview.org/2005/hover281105.html>> & <<http://mrzine.monthlyreview.org/2005/hover021205.html>> (accessed 18 January 2011).

IDEA (International Institute for Democracy and Electoral Assistance) (2011) *Voter Turn Out Data Base*, Online, Available HTTP: <<http://www.idea.int/vt/index.cfm>> (accessed 29 January 2011).

IFRC (International Federation of Red Cross and Red Crescent Societies) (2005) *World Disaster Report 2005*, Geneva: IFRC.

IFRC (2011) *The Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief*, Geneva: IFRC, Online, Available HTTP: <<http://www.ifrc.org/publicat/conduct/>> (accessed 29 January 2011).

INEE (Inter-Agency Network for Education in Emergencies) (2011) *INEE Minimum Standards Handbook*, Online, Available HTTP: http://www.ineesite.org/index.php/post/inee_handbook/ (accessed 29 January 2011).

IPCC (Intergovernmental Panel on Climate Change) (2011) *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*, Geneva: IPCC, in press.

Kelman, I and Poole, S. (2006) *Mitigation Saves*, Version 9, 10 January, Online, Available HTTP: <http://www.ilankelman.org/miscellany/MitigationSaves.rtf> (accessed 18 January 2011).

Kent, G. (2001) 'The human right to disaster mitigation and relief', *Environmental Hazards*, 3:137-8.

Kent, G. (2010) 'Should nations force aid on others? Rights and obligations', *Natural Hazards Observer*, January: 1 & 18-22.

Kent, G. (2011) 'Rights and Obligations in International Assistance', In P. Bobrowsky (ed) *Encyclopedia of Natural Hazards*, Heidelberg: Springer, in press.

King, R.O. (2005) 'Federal flood insurance: The repetitive loss problem', Congressional Research Service (CRS) Report for Congress, Washington, D.C.: CRS, Online, Available HTTP: <http://www.fas.org/sgp/crs/misc/RL32972.pdf> (accessed 29 January 2011).

Kreidler, M. and Wagner, T. (2006) 'From risk to opportunity: How insurers can proactively and profitably manage climate change', A Ceres Report, Online, Available HTTP: http://www.summits.ncat.org/docs/Ceres_Insurance_Climate_%20Report_090106.pdf (accessed 20 January 2011).

Lassa, J. (2010) 'Institutional Vulnerability and the Governance of Disaster Risk Reduction: Macro, Meso and Micro Analysis', PhD Thesis, University of Bonn.

Lavell, A. (1994) 'Opening a policy window: The Costa Rican hospital retrofit and seismic insurance programme 1986-1992', *International Journal of Mass Emergencies and Disasters*, 12, 1: 95-115, Online, Available HTTP: <http://desastres.usac.edu.gt/documentos/pdf/eng/doc7127/doc7127-contenido.pdf> (accessed 24 January 2011).

Linnebooth-Bayer, J. and Mechler, R. (2007) 'Insurance against Losses from Natural Disasters in Developing Countries', United Nations World Economic and Social Survey, Online, Available HTTP: http://157.150.195.10/esa/policy/wess/wess2008files/ws08backgroundpapers/bandm_jul08.pdf (accessed 20 January 2011).

Llanto, G. M. and Badiola, J. R. (2010) 'Innovations in Financing Food Security', Philippine Institute for Development Studies, Online Available HTTP: <http://dirp3.pids.gov.ph/ris/dps/pidsdps1014.pdf> (accessed 20 January 2011).

National Disaster Management Centre (NDMC) and Reid, P. (2008) *The South African Disaster Risk Management Handbook Series*. Pretoria: NDMC, Online, Available HTTP: <http://www.ndmc.gov.za/Documents/PriorityGuidelines.aspx> (accessed 18 January 2011).

Radford, T. and Wisner, B. (2011) 'Media, communication and disaster', in B. Wisner, J.C. Gaillard and I. Kelman (eds) *Handbook of Hazards and Disaster Risk Reduction*, London: Routledge, in press.

Reale, A. (2010) 'Acts of God(s): The role of religion in Disaster Risk Reduction', *Humanitarian Practice Network* 48 (October), Online, Available HTTP: <http://www.odihpn.org/report.asp?id=3141> (accessed 18 January 2011).

Schoen, H. (2004) 'Winning by priming: Campaign strategies, changing determinants of voting intention, and the outcome of the 2002 German federal election', *German Politics and Society*, 22, 3: 65-82.

Shisanya, C.A. and Kyayesi, M. (2007) 'How is climate change perceived in relation to other socioeconomic and environmental threats in Nairobi, Kenya?' *Climatic Change*, 85: 271-84.

Sphere Project (2010) *Humanitarian Charter and Minimum Standards in Disaster Response*, Online, Available HTTP: <http://www.sphereproject.org/> (accessed 18 January 2011).

Strömbäck, J. and Nord, L.W. (2006) 'Mismanagement, mistrust and missed opportunities: A study of the 2004 tsunami and Swedish political communication', *Media, Culture & Society*, 28, 5: 789-800, Online, Available HTTP: <http://jesperstromback.files.wordpress.com/2009/12/tsunami.pdf> (accessed 29 January 2011).

Thompson, M. (2011) 'Civil society and disaster', in B. Wisner, J.C. Gaillard and I. Kelman (eds) *Handbook of Hazards and Disaster Risk Reduction*, London: Routledge, in press.

UN (1948) *Universal Declaration of Human Rights*, New York: UN, Online, Available HTTP: <http://www.un.org/en/documents/udhr/index.shtml> (accessed 29 January 2011).

UN (2006) *Convention on the Rights of Persons with Disabilities*, New York: UN, Online, Available HTTP: <http://www.un.org/disabilities/convention/conventionfull.shtml> (accessed 29 January 2011).

UNISDR (2009) *Terminology on Disaster Risk Reduction*, Geneva: ISDR, Online, Available HTTP: <<http://www.unisdr.org/eng/terminology/UNISDR-terminology-2009-eng.pdf>> (accessed 18 January 2011).

UNISDR (2009) *Global Assessment Report on Disaster Risk Reduction 2009*, Geneva: UNISDR, Online, Available HTTP: <<http://www.preventionweb.net/english/hyogo/gar/report/index.php?id=1130>> (accessed 18 January 2011).

UNOHCHR (United Nations Office of the High Commissioner for Human Rights) (1966) *International Covenant on Economic, Social and Cultural Rights*, Geneva: OHCHR, Online, Available HTTP: <<http://www2.ohchr.org/english/law/cescr.htm>> (accessed 29 January 2011).

Wisner, B. (2010a) 'Climate change and cultural diversity', *International Social Science Journal*, 61, 199, Online, Available HTTP: <<http://onlinelibrary.wiley.com/doi/10.1111/j.1468-2451.2010.01752.x/pdf>> (accessed 18 January 2011).

Wisner, B. (2010b) 'Untapped potential of the world's religious communities for disaster reduction in an age of accelerated climate change: An epilogue and prologue', *Religion* 40,2: 128-31.

World Bank (2010) *Natural Hazards, UnNatural Disasters*, Washington, D.C.: World Bank.

World Bank (2008) 'World Bank project improves risk management and earthquake mitigation in Turkey', World Bank webpage for the Turkish Catastrophic Insurance Pool project, Online, Available HTTP: <http://www1.worldbank.org/finance/html/tcip_open.html> (accessed 27 January 2011).