

Transforming disaster risk management: a political economy approach

By Emily Wilkinson

The recently released Intergovernmental Panel on Climate Change (IPCC) ‘Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: Summary for Policymakers’ (SREX) (IPCC, 2011) calls for a mix of incremental and transformational changes to reduce the risk from climate extremes now and in the future. Incremental adjustments may not be enough and current disaster risk management (DRM) policies insufficient to address even existing levels of risk.

This Background Note looks at research undertaken in recent years by disaster researchers on the complex role of institutional arrangements in shaping policy decisions. In doing so it identifies some key research issues that need to be addressed to promote the kind of institutional transformation required to deal with current and future climate extremes, including the need for more multidisciplinary perspectives on DRM.

DRM refers to a conceptual framework and set of measures developed to minimise vulnerability and the risks associated with natural hazards. In the past, disasters were considered to be one-off, unpredictable and natural events, but the increasing use of a DRM lexicon in policy documents suggests that the social causes of disaster that make populations vulnerable and expose them to particular hazards are beginning to be recognised.

A lot can be done to reduce disaster risk and governments are coming under increasing pressure to protect their citizens from harm caused by hazards. Most countries have developed national management systems and specialised organisations, usually of a civil nature, to fulfil this mandate (Beatley, 1989; Quarantelli, 2000). However, these systems tend to

be reactive and response-orientated, with governments spending substantially more on the response to emergencies than on measures to anticipate and manage risk (World Bank, 2010).

Support for risk management

Many studies support the idea that *ex ante* DRM measures are economically effective. A regression analysis of disaster damage and DRM spending in the US on, for example, flood protection and contingency planning for earthquakes and hurricanes from 1985 to 2004, suggests that \$1 of risk reduction spending can result in as much as a \$15 decrease in disaster damage (Healy and Malhotra, 2008). Others report differences in effectiveness depending on the type of hazard: for example, the benefit-cost ratio of the US Federal Emergency Management Agency (FEMA) flood mitigation projects is around 5, compared to 1.5 for earthquake mitigation measures (US National Institute of Building Science, 2005). Despite the clear economic benefits outlined above and a growing awareness of the need for *ex ante* measures to reduce risk, most governments continue to focus policies and resources to deal with disaster on emergency response and recovery (World Bank, 2010).

Considerable effort has been made to understand, map and communicate risk information to the public in many of the world’s most disaster-prone locations. The hope is that, if they have adequate information, people will react in a predictable and rational way to reduce risk ‘up to the point when the expected benefits (avoiding losses) exceed the measures’ costs’ (World Bank, 2010). This is the rational choice argument.

More radical economists challenge this explanation arguing that people appear to behave in *irrational* ways for a number of reasons, including power relations that restrict access to information on

disaster risk and DRM options, the existence of probability thresholds and lack of confidence in information providers (Basolo et al., 2009; Slovic et al., 1974; Palm, 1981; Wisner et al., 2004). The motives behind individual responses to disaster risk have received considerable attention from sociologists, anthropologists and psychologists and are not the focus of this paper. Instead I examine some of the factors affecting the decisions taken by national and local authorities to address disaster risk within their territories.

A political economy perspective

DRM frameworks are, by definition, normative, emphasising particular approaches and actions. For example, the Hyogo Framework for Action 2005-2015, comprises five ‘priority areas’ for intervention:

- make disaster risk reduction a priority
- know the risks and take action
- build understanding and awareness
- reduce underlying risk
- be prepared and ready to act.

Questions of *how* different options for reducing risk are identified and selected and the reasons *why* some options are not addressed, are ignored by this framework.

However, political economy perspectives of disaster and public policy processes are beginning to receive more attention. This reflects a parallel growing interest in development circles in understanding drivers of change, but it also responds to signs that national governments endorse DRM but have not yet matched this nominal commitment with adequate policies or funding.

Political economy analysis focuses on the institutions through which policies are developed and on understanding the links between politics and the economy, with a focus on power relations, incentives, and the influences within formal and informal processes (Collinson, 2003; Williams, 2011). The UK Department for International Development (DFID) and other agencies have used a political economy approach in their work on governance and institutional strengthening to help identify blockages and opportunities to remove obstacles and facilitate change (DFID, 2009; Rocha Menocal, 2011).

If geared towards understanding and resolving a *policy problem* – as opposed to its more common use in macro-level and sectoral analysis – political economy analysis can be of particular relevance to studies of decision-making around DRM. This approach offers the potential to look beyond DRM as a repertoire of potential quasi technocratic

adjustments and to develop instead a more sophisticated theory of policy responses to disaster risk (Tierney, 1989).

Social scientists have provided different explanations of disaster. For example, human ecology and behaviourist traditions in disaster studies located the ‘problem’ of disasters within the affected group rather than broader social processes (Cuny, 1983; Hewitt, 1983; Pelling, 2001). More radical perspectives on disaster developed in the 1970s and 1980s emphasised the political and social factors that create inequality, vulnerability and lack of entitlements (O’Keefe et al., 1976; Oliver-Smith, 1979; Sen, 1981).

More recently, experts have begun to examine policy issues using quantitative statistical analysis. A number of econometric studies, for example, consider the relationship between investment in DRM and disaster-reported losses across countries with other variables such as type of political regime, levels of corruption and other governance indicators (Keefer, 2009).

Other attempts to understand policy processes look at the circumstances under which events act as catalysts, prompting changes in DRM policy and sometimes broader political and social changes (Kreps, 1998; Olson and Gawronski, 2003; Pelling and Dill, 2006, 2010; Watts, 1983). One influential study in the 1990s found that the economic and political effects of disaster could be explained by society’s pre-disaster conditions, and governments that respond effectively are rewarded with greater legitimacy, even if *ex ante* measures were insufficient (Albala-Bertrand, 1993).

Notwithstanding the importance of these and other studies, the DRM literature as a whole remains open to the criticism that it lacks a convincing narrative on policy-making. National policy processes are political and non-linear, and the diverse interests and incentives that drive these processes are not addressed directly in donor, NGO or UN initiatives.

In other related areas more sophisticated analytical frameworks have prompted a re-conceptualisation of policy. In the field of food security, for example, a paradigm shift has occurred. The World Food Conference of 1974 recognised food security as primarily a macro level ‘food first’ availability issue; but food security was redefined subsequently as a problem of people’s access to food informed by micro level ‘livelihood’ perspectives. Theories explaining individual access to food and how people respond to shocks advanced by Amartya Sen (1981) and others, have influenced policy agendas to take into account diverse local conditions, such

as the character of food insecurity, state capacity and political circumstances, and people's perceptions (Maxwell, 1996).

The case for public provision

DRM is an area of public policy, but one that differs in important ways from sectoral areas such as education or health. Decision-making is often driven by crisis and requires high levels of multi-stakeholder cross sectoral cooperation and coordination. DRM measures have some of the characteristics of what economists refer to as 'public goods' because they are underprovided by the market, create negative externalities, are free from rivalry and are non-excludible.

For example, individuals and communities are unlikely to construct enough robust levees because they do not take into account the flood protection benefits that they might offer to others (Keefer, 2009). They may, however, construct levees that protect themselves, with a negative external impact on others, such as those who live outside the embankments.

Non-rivalry means that consumption by one individual does not reduce the availability of the good to others and non-excludability means that people cannot be excluded from using the good. Early warning systems are good examples of both these public good characteristics.

Governments not only provide goods and services to reduce disaster risk, they can also engage in activities that influence the behaviour of others. To examine the institutional influences on DRM policy it is useful to divide different government measures into categories. Five roles for government have been identified here:

1. *Governments as providers of disaster risk reduction goods and services.* Examples of DRM measures with public good characteristics that are provided directly by the government include early warning systems; buildings, such as shelters and hospitals, to reduce loss of life and property during and after a disaster; and environmental buffers, such as mangrove belts and coral reefs, which provide natural protection from tidal waves and storm surges (World Bank, 2010).
2. *Governments as risk avoiders.* In order to reduce risk in society, governments not only have to provide public goods and services, they also have to refrain from actions that generate risk. They are responsible for substantial investments in infrastructure, such as building new roads, and the provision of hospitals and schools. These need to

be located and built in such a way as to minimise exposure and vulnerability to environmental hazards.

3. *Governments as regulators of private sector activity.* Investment in housing is carried out mainly by the private sector. To prevent construction in high risk areas and ensure that the structures built can withstand environmental hazards, governments can produce recommendations, standards and regulations on building practices and land use and, in the case of regulations, invoke penalties for non-compliance.
4. *Governments as promoters of collective action and private sector activity.* Not all DRM measures are within the public domain. Families, social groups and businesses also act to protect lives and property and government programmes, such as education and communication strategies, can help to raise awareness of disaster risk and encourage people to prepare (Wilkinson, 2012).
5. *Governments as coordinators of multi-stakeholder activities.* DRM requires coordinated action by public and private stakeholders. Flood risk management, for example, requires the participation of meteorological, hydrological management, environmental, water and sanitation authorities; public and private land users; community groups; planning departments and civil protection departments (Williams, 2011). Governments can provide leadership and coordination, but community and private sector involvement is also needed for DRM measures to be effective (Wilkinson, 2012).

Political economy determinants of DRM

This section examines different explanations of why government performance in these five roles is considered sub-optimal by international agencies and academics. An apparent lack of interest and political will is combined with resistance, complex political and economic incentive structures, information gaps and coordination problems at different scales of governance. These are outlined below, and warrant further attention.

Incentive structures

Insufficient DRM services can be explained partly by lack of resources and poor countries do tend to spend less on DRM (Keefer, 2009). There are trade-offs in all public investment decisions and governments have to select policies and distribute public funds according to need, public demand and other pressures and imperatives, including economic growth.

Linked to this, studies of the political economy of

DRM identify lack of salience as a constraining factor. The benefits of DRM are hard for citizens to perceive, making policy reform unlikely, as ‘governments respond more to political pressure than to reasoned arguments to change their policies, and that pressure can best be exerted by those who suffer the effects of disaster’ (Maskrey, 1989: 87). As a result, less visible activities are more likely to be neglected, such as environmental protection and enforcement, building inspections and risk assessment and planning processes (Williams, 2011).

The benefits of DRM are more likely to be underestimated when people and governments have no experience in dealing with specific hazards (Sunstein and Zeckhauser, 2011). However, even in areas that have experienced a recent disaster, other problems may take centre stage, such as law and order and reconstruction efforts (Prater and Lindell, 2000: 73). High impact disasters make DRM policies more salient, opening up what are referred to as ‘policy windows’ in the aftermath of disaster, but the focus is usually on deficiencies in relief efforts. Longer-term strategies to reduce future losses are rarely a priority during recovery and reconstruction phases (Birkland, 1996: 223), although the principle of ‘building back better’ has been adopted enthusiastically by humanitarian agencies.

Some DRM policies are more prone to distortions. One study suggests that emergency preparedness and communications systems are amongst the most effective DRM measures available to government, as they ‘require little in the way of complex (re-) construction [and] are likely to be both comparatively cost-effective and institutionally simple’ (Kenny, 2009: 24). Nevertheless, disaster preparedness suffers more than other types of measures from lack of public support because citizens cannot easily observe the effect of government actions on their welfare (Keefer, 2009). They cannot detect the difference between welfare losses from disasters caused by the direct shock and those caused by inadequate government policies to deal with that shock, and are more likely to attribute losses to government failures. Governments, therefore, prefer policies that offer tangible benefits to spatially concentrated groups, such as water diversion strategies, although these are less cost-effective. Flood control projects are also likely to have substantial distributional consequences that are often ignored in cost-benefit analysis and impact studies (Boyce, 1990).

Along with the lack of political incentives to implement DRM, there may also be significant political costs attached to particular measures. Powerful interest groups are likely to oppose government actions focused on regulating private sector activity, such as

the imposition of controls on logging on unstable hillsides or enforcement of land use regulations on hotel construction along the coast (Drabek et al., 1983; Tierney, 1989; Williams, 2011).

The urban poor, forced to live on precarious land in dangerous locations because of high land prices, may also oppose government attempts to regulate land use. Any benefits associated with DRM, which are only realised after a disaster occurs or when it fails to occur, must therefore be weighed against the political and economic costs. For example, prohibiting development in hazard-prone areas means losing revenues from development charges and property taxes – two vital sources of funding for local governments (Henstra and McBean, 2005: 111).

The existence of formal regulatory mechanisms to reduce risk can also encourage rent-seeking and corruption. Corruption is particularly common in public construction, where stolen funds reduce the quality of buildings and materials used, although a World Bank report (2010) suggests that poor supervision and management is an equal, if not greater, problem. DRM policies can also encourage rent-seeking by public officials, producing outcomes that might be detrimental to vulnerable groups. Land use plans to prevent construction in high risk locations have a significant effect on land prices and can easily be manipulated by officials to favour particular projects or take advantage of financial gains from re-zoning (Williams, 2011). Housing relocation projects are of enormous value to the construction sector and can be lucrative for local politicians, but the housing solutions and sites offered to low-income families are often inappropriate (Jha, 2010).

As well as failing to provide adequate measures to reduce risk, governments can obstruct private initiative through their DRM attempts (Keefer, 2009). In his influential essay entitled ‘Human adjustment to floods: A geographical approach to the flood problem in the United States’, Gilbert White (1945) argued that an over-reliance on physical structures in the US increased the impact from disasters by reducing incentives for individuals to adopt risk-averse behaviour. In the Mississippi flood plains, flood control works have contributed to risk through the encouragement of settlement, the neglecting of flood-proofing and the purchase of insurance. This ‘human tendency to remain passive in the face of uncertain events’ and the ‘excessive faith in government mitigation measures’ (Kenny, 2009: 17) is a curious finding, however. It contrasts so starkly with observations elsewhere that people tend to underestimate the benefits of DRM and do not make demands on government to improve policies.

Recent political economy studies of DRM also

argue that governments fail to invest to reduce risk in DRM because of a moral hazard or crowding out effect created by the presence of external aid when a disaster occurs. In the case of countries that have a weak national response capacity, the moral hazard for DRM investment is created by the willingness of international aid agencies to provide relief. The result is aid dependency.

Cohen and Werker (2008: 810) argue that this is the case in Ethiopia where ‘the availability of competently delivered outside food aid means that the Ethiopian government does not need to stake its political future on solving the food-insecurity problem’. In countries that have funds for disaster response, there appear to be strong political incentives to spend on relief: in the US, relief spending can increase the incumbent presidential party’s vote by 5% (Kenny, 2009).

Finally, there may be additional ideological drivers behind DRM among the issues I have highlighted above that need to be explored in more detail. It is unclear, for example, whether social welfare-oriented governments spend more on *ex ante* DRM measures than market-driven ones, or if democratic governments pay more attention to issues affecting social welfare than autocratic ones. Interestingly, cross-country comparisons suggest that developing countries, with and without competitive elections, pursue similar disaster management policies (Keefer, 2009).

Information gaps

In addition to the incentive issues outlined above, the failure of government to deliver adequate DRM policies can also be explained by significant informational problems including:

- the complexity of disaster risk
- the myriad of policy options available and
- the uncertainty surrounding the relative effectiveness of different strategies.

These are enormous issues that cannot be covered adequately here, but a number of examples help illustrate the problems faced by policy-makers. Civil protection officials in Mexico, for example, are unsure what constitute ‘necessary’ and ‘sufficient’ measures to reduce risk in hurricane-prone regions (Wilkinson, 2012). Risk communication and preparedness planning may be more effective in reducing damage from hurricanes than other measures, and are necessary to both lessen loss of life and prevent damage to property. However, some damage is inevitable unless more politically and economically costly measures are taken to reduce exposure

through land-use planning and resettlement.

There is also significant uncertainty around the indirect and longer-term costs and benefits of DRM measures (Boyce, 1990; Keefer, 2009). World Bank flood control projects in Bangladesh designed in the 1960s and 1970s, for example, were subject to cost-benefit analyses, but these did not consider fully the potential redistributive outcomes of building embankments or the negative long-term impact on open water fisheries (Boyce, 1990).

Governments may, therefore, be willing to implement DRM strategies but be unsure about which measures to adopt to produce social, political and economic outcomes that reduce the overall level of risk, protect the most vulnerable, gain political credibility and that are economically efficient. These outcomes may not all be compatible.

Intra-governmental relations and local governance

A key to understanding DRM processes and outcomes may also lie in the nature of relationships between different levels of government. DRM is not a sectoral issue, but requires the involvement of a range of public sector agencies at different levels of government. All five types of the government intervention identified above involve different public sector agencies that are unaccustomed to working collectively on cross-cutting issues. The nature of this collaboration will depend on how power is dispersed horizontally and vertically across government.

Decentralisation reforms in many countries should have given greater authority and resources to local governments, but these reforms often impose greater responsibilities and additional costs that are not paid for by central government – a problem referred to as unfunded mandates (Posner, 1998). In Mexico, decentralisation has given municipal government greater financial autonomy than before, but municipalities, particularly poor rural ones, remain financially and politically subservient to state governments (Rodríguez, 1995). This is because *informal* institutional arrangements also affect the kind of measures adopted by local government and because of the continued existence of traditional paternalistic relationships between state and municipal governments in many parts of the country (Wilkinson, 2012).

International agencies and donors are placing greater responsibility on lower levels of government to deal with disasters (see DFID, 2006; UN/ISDR, 2005), but local governments are constrained by a number of factors beyond those identified above. Many lack the resources and technical expertise to undertake a comprehensive assessment of the hazards to which they are vulnerable (Henstra and

Sancton, 2002). They are thought to be less capable of enforcing mandates: ‘Many local governments seem incapable of effectively administering even simple laws and regulations, and there is no reason to expect hazard-risk management to be an exception’ (Rossi et al., 1982: 9).

In addition, they have strong incentives to respond to the interests of local elites. In the US, for example, considerable extra-governmental influence is held by local business and other private groups, particularly real-estate firms, residential developers and other pro-growth economic interests (Rossi et al., 1982). Local authorities are also constrained by recent privatisation trends and new public management reforms that discourage government intervention in the affairs of enterprises or individuals (Wolensky and Wolensky, 1990). It should not be surprising then, given their lack of resources and authority, that local governments pay little attention to DRM and development planning issues more generally.

An additional disincentive to investing in DRM may occur when central governments are expected to bail out lower levels of government (Keefer, 2009). This moral hazard argument is often used to explain lack of investment in local DRM. However, it may not be the most influential factor in disaster policy, given the uncertainty surrounding policy outcomes, lack of resources and other pressures faced by local government.

Transforming DRM through political economy analysis

The disaster field is in need of a paradigm shift similar to that which has occurred in the area of food security over the last 30 years. There are promising signs that this is already underway, with many studies demonstrating cost-effective *ex ante* measures, and broad support from international agencies for organisational structures and funding that support national and local-level DRM initiatives. Nevertheless, government policies in most countries continue to centre on responding to disaster for the reasons identified above. A selective review of the literature on DRM suggests that the lack of theoretical focus in studies of disaster policy is partly responsible for this inertia. In food security, in contrast, the development of strong theoretical propositions about access to food and a clear demonstration of their relevance to the policy problem helped to drive transformation.

Another problem for DRM and other policy areas is that although political economy analysis can help to understand why policy practices persist, it suffers from being an outsider’s perception of policy proc-

esses. Understanding power relations and incentives is key to exploiting ‘room for manoeuvre’ and identifying policy alternatives, but studies of policy reform in agriculture and rural development suggest that this analysis must be undertaken by insiders: the decision-makers themselves (Clay and Schaffer, 1984). Working with relevant actors to understand their interests and interrelationships should, therefore, be an essential feature of political economy approaches to DRM.

A cursory review of the literature on DRM suggests that findings on many issues can only be highly provisional and conclusions tentative. Further research on political processes and policy change is needed to develop a clearer theoretical focus for DRM. Much could be achieved through interdisciplinary research, drawing on political science expertise on local government and decentralisation, social anthropology on collective behaviour and economics on the role of information, as well as physical science research on the nature of specific hazards and their physical impacts.

Despite a broad recognition that DRM lacks salience with citizens and their representatives, there is little in the way of analysis to help explain why this is a particular problem for DRM, the circumstances under which such obstacles are overcome, or why citizens prefer different types of public policies. A political economy analysis could, therefore, usefully ask questions such as:

- How does DRM get on to the political agenda?
- Is this different from other social policies?
- How important is salience in determining the kind of DRM measures that are adopted?
- How do particular agents operate within the political system?
- What mechanisms do/might they use to change DRM policies?

Developing clear narratives on disaster policy would provide a useful starting point for reducing the risk from climate extremes now and in the future. However, the influences on national and local DRM and adaptation policies are not entirely the same and will need further reflection.

DRM is concerned with geo-physical and technological hazards (as well as hydro-meteorological ones). Policies to address the risks stemming from these hazards are influenced by particular sets of interests and incentives because they are low probability events (especially at the local level), with high levels of uncertainty around timing, intensity and impact, and often require high-cost structural solutions such as earthquake engineering.

Adaptation policies will also have to take into account the disaster risks associated with climate variability and gradual changes in mean temperatures and rainfall, which require different kinds of interventions than those for rapid onset disasters. Theories of policy change therefore need be able to explain the factors influencing policy responses to very different kinds of disaster risk.

Written by Emily Wilkinson, ODI Research Fellow (e.wilkinson@odi.org.uk). The author would like to thank Edward Clay, Senior Research Associate at ODI, and Frances Seballos, Research Officer at the Institute for Development Studies, for their helpful suggestions for improvements to this paper.

References

- Albala-Bertrand, J.M. (1993) *The political economy of large natural disasters*. Oxford: Clarendon Press.
- Basolo, V.; Steinberg, L. J.; Burby, R. J.; Levine, J.; Cruz, A. and Huang, C. (2009) 'The effects of confidence in government and information on perceived and actual preparedness for disasters', *Environment and Behavior* 41(3): 338-364.
- Beatley, T. (1989) 'Towards a moral philosophy of natural disaster mitigation', *International Journal of Mass Emergencies and Disasters* 7(1): 5-32.
- Birkland, T.A. (1996) 'Natural disasters as focusing events: policy communities and political response', *International Journal of Mass Emergencies and Disasters* 14(2): 221-243.
- Boyce, J.K. (1990) 'Birth of a megaproject: political economy of flood control in Bangladesh', *Environmental Management* 14(4): 419-428.
- Clay, E.J. and Schaffer, B.B. (1984) *Room for Manoeuvre: A Exploration of Public Policy in Agriculture and Rural Development*. Cranbury, NJ: Associated University Press.
- Cohen, C. and Werker, E.D. (2008) 'The political economy of "natural" disasters', *Journal of Conflict Resolution* 52: 795-819.
- Collinson, S. (2003) *Power, Livelihoods and Conflict: Case Studies in Political Economy Analysis for Humanitarian Action*. London: ODI.
- Cuny, F. (1983) *Disasters and Development*. New York: Oxford University Press.
- DFID (2006) 'Reducing the risk of disasters: helping to achieve sustainable poverty reduction in a vulnerable world', A DFID Policy Paper. London: Department for International Development.
- DFID (2009) 'Political economy analysis: how to note', A DFID Practice Paper. London: Department for International Development.
- Drabek, T.E., Mushkatel, A.H. and Kiliganeck, T.S. (1983) *Earthquake Mitigation Policy: The Experience of Two States*. Boulder, CO: University of Colorado, Institute of Behavioral Science.
- Healy, A.J. and Malhotra, N. (2008) *Mass and elite preferences for disaster relief and prevention spending: retrospective voting and failures in electoral accountability*. Working Paper. Los Angeles, CA: Department of Economics, Loyola Marymount University.
- Henstra, D. and McBean, G. (2005) 'Canadian disaster management policy: moving toward a paradigm shift?', *Canadian Public Policy* 16(3): 303-318.
- Henstra, D. and Sancton, A. (2002) 'Mitigating catastrophic losses: policies and policy-making at three levels of government in the United States and Canada', ICLR Research Paper Series 23. Ontario: Institute for Catastrophic Loss Reduction.
- Hewitt, K. (1983) 'The idea of calamity in a technocratic age', in K. Hewitt (ed.) *Interpretations of Calamity: from the Viewpoint of Human Ecology*. Boston MA: Allen and Unwin.
- IPCC (2011) *Special Report on Managing the Risks of Climate Extremes and Disasters to Advance Climate Change Adaptation*. Intergovernmental Panel on Climate Change.
- Jha, A.K.; Barenstein, J.D.; Phelps, P.; Pittet, D. and Sena, S. (2010) *Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters*. Washington, DC: World Bank.
- Keefer, P. (2009) 'Disastrous consequences: the political economy of disaster risk reduction'. Washington, DC: World Bank.
- Kenny, C. (2009) *Why Do People Die in Earthquakes? The costs, benefits and institutions of disaster risk reduction in developing countries*. Policy Research Working Paper 4823. Washington, DC: World Bank.
- Kreps, G. (1998) 'Disasters as systemic event and social catalyst', in E.L. Quarantelli (ed.), *What is a Disaster? Perspectives on the Question*. London: Routledge.
- Maskrey, A. (1989) *Disaster Management: A Community Based Approach*. Oxford: Oxfam.
- Maxwell, S. (1996) 'Food security: a post-modern perspective', *Food Policy* 21(2): 155-170.
- O'Keefe, P., Westgate K. and Wisner B. (1976) 'Taking the naturalness out of natural disaster', *Nature* 260 (5552): 566-567.
- Oliver-Smith, A. (1979) 'Post-disaster consensus and conflict in a traditional society: the 1970 avalanche of Yungay, Peru', *Mass Emergencies* 4(1): 39-52.
- Olson, R.S. and Gawronski, V.T. (2003) 'Disasters as critical junctures? Managua, Nicaragua 1972 and Mexico City 1985', *International Journal of Mass Emergencies and Disasters* 21(1): 5-35.
- Palm, R. (1981) 'Public response to earthquake hazard information', *Annals of the Association of American Geographers* 71(3): 389-399.
- Pelling, M. (2001) 'Natural disasters?', in Castree N. and Braun B. (eds.) *Social Nature*. Oxford: Blackwell.
- Pelling, M. and Dill, K. (2006) 'Natural disasters as catalysts of political action'. ISP/NSC briefing paper 06/01. London: Chatham House.
- Pelling, M. and Dill, K. (2010) 'Disaster politics: tipping points for change in the adaptation of socio-political regimes', *Progress in Human Geography* 34(1): 21-37.
- Posner, P.L. (1998) *The Politics of Unfunded Mandates: Whither Federalism?* Washington, DC: Georgetown University Press.
- Prater, C.S. and Lindell, M.K. (2000) 'Politics of hazard mitigation', *Natural Hazards Review* 1(2): 73-82.
- Quarantelli, E.L. (2000) 'Disaster planning, emergency management and civil protection: the historical development of organized efforts to plan for and to respond to disasters'. DRC Preliminary Paper 301. Newark, DE: University of Delaware, Disaster Research Center.
- Rocha Menocal, A. (2011) 'Understanding pro-poor growth: a role for political economy analysis', *Developing Alternatives* 14(1): 3-11.
- Rodriguez, V.E. (1995) 'Municipal autonomy and the politics of intergovernmental finance: is it different for the opposition?', in

- V.E. Rodriguez and Ward P.M. (eds), *Opposition Government in Mexico*. Albuquerque, NM: University of New Mexico Press.
- Rossi, P. H., Wright, J. D. and Weber-Burdin, E. (1982) *Natural Hazards and Public Choice: The State and Local Politics of Hazard Mitigation*. New York: Academic Press.
- Sen, A. (1981) *Poverty and Famines: An Essay on Entitlement and Deprivation*. Oxford: Oxford University Press.
- Slovic, P., Kunreuther, H. and White, G.F. (1974) 'Decision processes, rationality and adjustment to natural hazards', In White, G.F. (ed.), *Natural Hazards: Local, National and Global*. New York: OUP.
- Sunstein, C.R. and Zeckhauser, R. (2011) 'Overreaction to fearsome risks', *Environmental and Resource Economics* 48: 435-449.
- Tiemey, K. (1989) 'Improving theory and research on hazard mitigation: political economy and organizational perspectives', *International Journal of Mass Emergencies and Disasters* 7 (3): 367-396.
- UN/ISDR (2005) 'Hyogo Framework for Action 2005-2015: building the resilience of nations and communities to disasters'. Geneva: United Nations International Strategy for Disaster Reduction.
- UN/ISDR (2009) *Global Assessment Report on Disaster Risk Reduction*. Geneva: United Nations International Strategy for Disaster Reduction.
- US National Institute of Building Science (2005) cited in OECD (2008) 'Costs of inaction on environmental policy challenges', ENV/EPOC (2007)17/REV2. Paris: Organisation for Economic Cooperation and Development.
- Watts, M. (1983) 'On the poverty of theory: natural hazards research in context', in K. Hewitt (ed.), *Interpretations of Calamity: from the Viewpoint of Human Ecology*. London: Allen and Unwin.
- White, G.F. (1945) 'Human adjustment to floods: a geographical approach to the flood problem in the United States', Research Paper 29. Chicago, IL: University of Chicago.
- Wilkinson, E. (2012) 'Why "small is beautiful" in municipal disaster risk reduction: Evidence from the Yucatán peninsula, Mexico', *Environmental Hazards* 11(2).
- Williams, G. (2011) 'Study on disaster risk reduction, decentralization and political economy: The political economy of disaster risk reduction'. Background report for the Global Assessment Report on Disaster Risk Reduction. Geneva: UN/ISDR.
- Wisner, B.; Blaikie, P.; Cannon, T. and Davis, I. (2004) *At Risk: Natural Hazards, People's Vulnerability and Disasters*. London: Routledge.
- Wolensky, R.P. and Wolensky, K.C. (1990) 'Local government's problem with disaster management: a literature review and structural analysis', *Policy Studies Review* 9(4): 703-725.
- World Bank (2010) *Natural Hazard, Unnatural Disasters: The Economics of Effective Prevention*. New York: World Bank.

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