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The Political Economy of Disaster Risk Reduction

Gareth Williams

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**STUDY ON DISASTER RISK REDUCTION,
DECENTRALIZATION AND POLITICAL ECONOMY**

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The views expressed in this report are those of the author and do not necessarily represent those of the United Nations, including UNDP or UNISDR.

Executive summary

This report's key argument is that effective disaster risk reduction (DRR) is not simply a technical challenge. It reflects the need to generate necessary political incentives to make DRR a priority issue. It addresses the central question of "what are the critical drivers that explain the uptake of disaster risk reduction policies, and how can national and international participants work to strengthen them?" The question is approached using a political economy analysis to examine the incentives, interests, institutions and power relations facing key stakeholders. The report draws on many examples including four country case studies (Colombia, Indonesia, Mozambique and South Africa) to illustrate various factors that either enable or obstruct progress in DRR.

Studies on DRR policy implementation have pointed to the varied performance of different countries, and have explained this in terms of linkages to political and institutional factors. There is a growing body of econometric evidence of factors that explains country differences in the number of people who die in disasters. This evidence shows that political competition and the quality of a country's institutions play a key role in determining the effectiveness of disaster risk reduction. These variables are important, but there is limited understanding of how their mechanisms and causal processes operate in practise.

This report sets out to develop an analytical framework for understanding how political and economic variables affect incentives for effective disaster risk reduction. The framework is based on the following propositions:

- 1) There are many market failures, coordination problems and social protection concerns inherent in disaster risk reduction. These can only be addressed through public policy or other forms of collective action.
- 2) Implementing required public policy and collective action depends on the existence of political incentives.
- 3) Many factors related to the country context, its institutions and political system affect the strength of these incentives.

The report draws attention to several incentive problems generated by the political economy that weaken political commitment to DRR. These include disincentives towards public goods provision, rent seeking and corruption, the political costs of controlling settlement and land use, the role of powerful interest groups creating environmental risks, and vested interests blocking organizational reform. However, the economic and political costs of disasters also create positive incentives for politicians to embrace DRR.

The key factors that affect the strength of political incentives (referred to in this report as drivers of change) are grouped as follows:

- 1) structures: the nature of disaster risk, political geography, social structures, state fragility and cultural beliefs and practises;
- 2) formal and informal institutions including DRR legislation, the organizational arrangements for DRR, decentralization, the nature of political competition and systems of political patronage;
- 3) political processes, including the role of particular interest groups, citizen pressure and reform 'champions'.

The report offers the following conclusions:

The nature of political competition. Effective disaster risk reduction is possible in both democratic and autocratic political systems. In practise, electoral competition in democratic states is often a rather weak source of pressure on politicians to implement effective DRR. However, democracy does provide a basis for creating stronger accountability, in particular where there is good information on disaster risk reduction, voter engagement with the issue and public scrutiny of government performance. There are also opportunities to work with existing rules of the game and various interests so as to strengthen incentives for disaster risk reduction in autocratic political systems.

The extent of patronage politics. Political patronage has been identified as a key obstacle to implementing comprehensive strategies for disaster risk reduction. In situations in which political competition is based on patronage, there are likely to be distortions in DRR policies, including weak provision of the public goods required to prevent disasters.

Variations in political geography, disaster risk and 'voice'. In many countries, disaster risk is concentrated in areas inhabited by poor and marginalized communities that lack political voice. However, central parts of the country and wealthier regions may also be exposed to disaster risk. Understanding these variations in political geography and risk patterns is often key to establishing the potential for improved DRR, and for identifying effective intervention strategies.

Citizen pressure for improved DRR. The strongest DRR systems are often based on direct citizen and community involvement in specific DRR activities. These create potential for citizens to exert pressure on government agencies as a means to drive policy change from the bottom up. In practise, the extent of citizen pressure and community involvement in DRR will depend on the nature of the political system, the extent of democratic rights and the permitted political 'space', as well as the level of citizen awareness in DRR. Even in open democratic systems citizen interest and engagement in DRR is often rather weak. However, there is potential to build on this in order to generate sustained pressure for improved DRR.

Horizontal pressure for improved DRR. Demand for improved DRR often arises from horizontal sources of pressure, including the role of academic institutions, scientific bodies, the media, advocacy organizations and concerns expressed by elite groups in relation to their own safety. Demand will be strongest when these groups form coalitions.

Existence of DRR 'champions'. In many countries particular individuals have played a decisive role in promoting DRR reforms and institution building. The existence of these 'champions' provides a more promising environment for international support, but their influence may not be permanent.

The political economy of disaster risk reduction is a relatively new topic. Therefore, many of the issues raised by this report are not fully resolved. Instead, it presents important research questions that need to be addressed to take the DRR agenda forward.

The report's final Section explores operational implications for development agencies and international organizations of implementing DRR programming. These include the importance of linking programming to an in-depth country analysis, identifying the right entry points for action, selecting suitable financing instruments, taking timing issues into account, and being aware of the incentives created by the agencies' politics and their ways of working.

1 Introduction

Effective policies for disaster risk reduction (DRR) can greatly reduce the loss of life and assets caused by disasters.^a Some governments have successfully adopted and implemented DRR policies, but others lag behind, leaving their citizens highly vulnerable. Many factors explain these differences in how countries adopt disaster risk reduction policies, including financial constraints, variations in the level of risk, and the significant technical and organizational challenges inherent in DRR. However, shortcomings in disaster risk reduction are increasingly being regarded as a consequence of weak governance that combines political and economic factors.

The need to gain a better understanding of the political economy of disaster risk reduction has become clearer over time as experience has been gained internationally in the practical implementation of DRR programmes. These programmes have tended to work mainly at a technical level, building capacity and organizations for disaster risk reduction and by following particular models of best practice. Good results have been achieved in many places. However, it has also become clear that many programmes fail to deliver their expected benefits due to a lack of 'political will' which, despite a clear need, is reflected in the low priority and the poor level of resources for DRR. The importance of these factors is now widely recognized, but not enough attention has yet been given to the question of how political will arises, and how to strengthen it.

This report's central question is "what are the critical drivers that explain the uptake of disaster risk reduction policies, and how can national and international participants work to strengthen them?" The question will be approached using a political economy analysis to examine the incentives, interests, institutions and power relations facing key stakeholders. The report will draw on many examples to illustrate the various factors that either enable or obstruct progress in DRR. However, some questions cannot be fully answered, and for others the evidence base is incomplete. This reflects the relatively limited (but growing) literature and research on this topic. In view of these gaps, this report aims to demonstrate the importance of the political economy of disaster risk reduction, to synthesize existing knowledge within a coherent framework, and to make the case for further research and action.

In Section 2 the report offers a brief description of the political economy analysis methodology used. Section 3 reviews the empirical evidence on the political economy determinants of disaster risk that have emerged from recent econometric studies. Section 4 explains the role of political economy in terms of the incentives and disincentives affecting the adoption of disaster risk reduction policies. Section 5 analyses the main factors that influence the strength of these incentives – grouped under the headings of structures, institutions and political processes. Section 6 offers conclusions, and recommendations relevant to agencies working in disaster risk reduction. It also focuses on the many unanswered questions about the political economy of disaster risk reduction that need to be addressed through further research.

This report has been commissioned by UNDP's Bureau of Crisis Prevention and Recovery as an input into the 2011 Global Assessment Report (GAR) on Disaster Risk Reduction. The

^a There are many kind of hazards that can lead to disaster, but this report deals with disasters resulting from 'natural' hazards. These include hydrometeorological (including windstorms, floods and droughts) and geological hazards (including earthquakes, landslides, tsunamis and volcanic eruptions).

GAR's primary audiences are national and local governments, along with a range of other users in intergovernmental organizations, development banks, academia, international nongovernmental organizations (NGOs) and local civil society.

This report has been prepared alongside a companion background report to the GAR that focuses on decentralization and its implications for disaster risk reduction.¹ Four country case studies: Colombia, Indonesia, Mozambique and South Africa provide the basis for the approach used in both reports

2 Methodology

This report uses a political economy perspective to analyse the processes that may encourage or block the adoption of disaster risk reduction policies. Political economy analysis focuses on the interaction of political and economic processes in a society: the distribution of power and wealth between different groups and individuals, and the processes that create, sustain and transform these relationships over time.^b It is increasingly recognized that these factors play a crucial role in explaining how particular policy decisions are generated through the political system, and whether they will be adequately implemented. Section 3 shows there is increasing evidence that disaster risk reduction is not simply a technical challenge; it is fundamentally shaped by political and economic processes.

There are several tools available for political economy analysis.^c This report uses a combination of these and draws particularly on three key elements at the heart of political economy analysis:^d

- the *interests and incentives* facing different groups in society (particularly political elites), and how these generate particular policy outcomes;^e
- the role that *formal institutions* (e.g. rule of law, elections) and *informal social, political and cultural norms* play in shaping human interaction and political and economic competition;
- the impact of *values and ideas*, including political ideologies.

In Section 4, the report develops a framework to consider the various interests and incentives that affect disaster risk reduction. It is argued that there are particular market failure and collective action problems inherent in disaster risk reduction that in many cases hinder effective, coordinated and well implemented policy. However, the strength and nature of these incentives varies greatly in different political and economic contexts. This suggests there is often considerable scope for domestic and external participants to play a positive role in promoting more effective DRR.

Section 5 uses the general incentive framework developed in this report to analyse the country-specific drivers that may encourage or block the adoption of disaster risk reduction policies. The drivers follow established frameworks for political economy analysis used by development organizations and are grouped under three headings: structures, institutions and political processes.

^b Definition from Collinson, S. *Power, livelihoods and conflict: case studies in political economy analysis for humanitarian action*, 2003, the UK's Overseas Development Institute (ODI), Humanitarian Policy Group.
<http://www.odi.org.uk/resources/download/241.pdf>.

^c For example, the UK's Department for International Development's (DFID) Drivers of Change analysis, The Netherlands Ministry of Foreign Affairs Strategic Governance and Corruption Assessment, and the World Bank's Problem Driven Governance and Political Economy Analysis.

^d From DFID (2009) *How-to note on Political Economy Analysis*.
<http://www.gsdrc.org/docs/open/PO58.pdf>

^e In this respect, political economy analysis adopts an explicitly rational choice perspective based on understanding the self-interest of different participants. However, the analysis does allow for collective action for the public good when common interests and incentives can be identified and used to build solutions.

- **Structures** are fundamental features of the country context and political economy that tend to change slowly and cannot be readily influenced in the short- to medium-term.
- **Institutions** constitute the *rules of the game* and are defined as the formal and informal rules and relationships that govern the behaviour of agents.
- **Political processes** describe the *games within the rules* and are the strategies used by individuals and groups to advance their interests in the framework of structures and institutions.

The report explores these three groups of drivers and draws on many examples from the four case study countries and elsewhere. Its analysis can help to identify the most important factors in a particular context, and sets out possible specific opportunities for domestic and international action to shift political incentives towards disaster risk reduction.

3 Evidence on the political economy determinants of disaster risk

Studies on DRR policy implementation have pointed to the varied performance of different countries, and have explained this in terms of linkages to political and institutional factors. An influential study on the causes of famine by noted Indian economist Amartya Sen² drew attention to the political economy dimensions of seemingly natural disasters. Sen famously asserted that: "No famine has ever taken place in the history of the world in a functioning democracy." However, careful analysis shows that policy makers need to be cautious about assuming that effective DRR is synonymous with democracy (see Section 5.2). Nevertheless, Sen's thesis is broadly correct and has been very influential in drawing attention to the political incentives facing a country's governing elite. Sen explains that: "Authoritarian rulers, who are themselves rarely affected by famines ... tend to lack the incentives to take timely preventative measures. Democratic governments in contrast have to win elections and face public criticism, and have a strong incentive to undertake measures to avert famines and other catastrophes."

Sen's work and other groundbreaking studies in the 1990s, including the work of José-Miguel Abdala-Bertrand,³ have sparked a growing interest in the political economy determinants of disaster risk. The more recent literature includes several econometric studies that have sought to explain differences in disaster mortality between countries in terms of key political economy variables while controlling for the effect of other geographical variables that affect disaster risk and mortality.^f The results are relatively robust and consistent, and demonstrate a particular connection between the number of people killed by disasters, political regime characteristics and the effectiveness of government institutions.

There are several recent studies of disaster mortality under different political regime characteristics, including work by Matthew E. Khan⁴ who found that comparable natural disasters that occur in democratic states result in fewer deaths than in natural disasters in autocracies. Using comparative data from different Indian states, Timothy Besley and Robin Burgess⁵ show that public food distribution and disaster relief expenditure are greater when governments face stronger electoral accountability, and when newspaper circulation is higher. However, political economist David Stromberg⁶ obtained an opposite result that indicates disaster mortality is higher in democracies. He attributes this finding to the greater transparency of democratic states in reporting disaster deaths.

More recent studies have focused on more specific types of political competition. Philip Keefer *et al*⁷ found that earthquake mortality is greater in recently created democracies than in older democracies. They also observed differences between autocracies with more and less institutionalized ruling parties, the latter being most strongly linked to high mortality. Meanwhile, authors Alejandro Flores and Alistair Smith⁸ show that mortality from a broad range of disaster types is greater in small coalition systems than in large coalition systems.⁹

^f For reasons of data availability, all of the studies mentioned here focus on disaster mortality rather than broader economic costs. The usual data source on disaster mortality is the Emergency Events (EM-DAT) database maintained since 1988 by the Centre for Research on the Epidemiology of Disasters (CRED). The main sources of governance indicators include the POLITY IV variables of the US-based Center for Systemic Peace, and the World Bank Institute's World Governance Indicators.

⁹ The size of the coalition is a concept that refers to the number of supporters that leaders require to stay in power. Small coalition systems tend towards a situation of autocracy and large coalition systems describe more democratic political competition.

Several studies have demonstrated a link between disaster mortality and indicators of institutional effectiveness⁴ and in 2007 David Stromberg⁶ showed that mortality is lower in countries with greater government effectiveness (as measured by the World Governance Indicators and other similar instruments). At the same time, Monica Escaleras *et al*⁹ examined this relationship for earthquake mortality. They found the death toll is higher in countries with greater public sector corruption where earthquake-safe building codes tend not to be enforced. In 2005, Nejat Anbarci *et al*¹⁰ examined similar mechanisms affecting earthquake mortality, and found that more people died in countries with greater income inequality, and where they suggested that social capital, trust and the prospects for collective action are weaker.

Most of the abovementioned studies control for the effects of income level variations and risks. The relationship between national income and disaster mortality is clear and well understood, with wealthier countries experiencing significantly lower disaster mortality, but higher financial losses.^{4,6,7} Rich countries have a greater ability to meet the costs of disaster risk reduction. At the same time, disaster risk reduction imposes higher opportunity costs in poorer countries because it can take money away from other priorities that may result in more lives saved at lower cost. For example, a 2009 research study by Charles Kenny¹¹ found that poorer countries may rationally chose to delay expensive investments in retrofitting buildings to make them earthquake resistant in order to fund anti-malaria campaigns that may offer higher and more immediate returns in terms of lives saved.

The observed links between governance variables and disaster mortality appear to be robust when controlling for variations in the level of hazard. For instance, in 2010 Keefer *et al*⁷ found that earthquake mortality per equivalent disaster is higher in countries with moderate rather than high seismic risk. The pattern can again be explained in terms of opportunity costs. The benefits of earthquake proofing will be greater and clearer when the risks are higher. At lower levels of risk, the justification for earthquake proofing is weaker because alternative investments are likely to offer more cost-effective ways to save lives.

All of these studies provide robust evidence that the varied performance of different countries in implementing policies for disaster risk reduction is closely linked to political and institutional factors. However, econometric studies do not explain how these factors operate and the causal processes involved. To explain these factors requires moving from a focus on global comparative studies to a more detailed examination of the political process within countries, and the ways they create incentives and disincentives for disaster risk reduction. The following sections of the report focus on this aspect.

4 The role of political economy in disaster risk reduction

This Section examines the mechanisms by which political economy factors may enable or obstruct the adoption of disaster risk reduction policies. The argument is based on the following steps which are explained in the sections that follow:

- a) There are many market failures, coordination problems and social protection concerns^h inherent in disaster risk reduction. These can only be addressed through public policy or other forms of collective action.
- b) Implementing required public policy and collective action depends on the existence of political incentives.

4.1 The need for public policy and collective action

Explaining the political economy of disaster risk reduction requires clarifying the reasons why and how governments and other organized groups need to be involved in DRR. The arguments are complex as there are many ways in which risk can be managed privately without government, for example in individual decisions about where to live and which insurance products to buy. If risk could be managed entirely on an individual basis through market mechanisms alone, then policy and political economy issues would not arise. However, this is not the case because there are important market failures and coordination problems inherent in many aspects of disaster risk reduction. The most important of these are explained below:

- **Public goods.** Disaster risk reduction policies require providing public goods. Public goods deliver shared benefits, but they tend to be underprovided by the market and require some form of collective action, often government provision.ⁱ Examples of public goods involved in disaster risk reduction include collecting and communicating information on risk, building and maintaining large physical structures to protect many lives and properties (e.g. flood barriers or drainage ditches), and providing and enforcing safety enhancing regulations including building codes and planning rules.
- **Information asymmetries.** Disaster risk reduction is affected by many information asymmetries, a problem where one party to a transaction possesses more complete information than the other. For example, buyers of new buildings wish to ensure that construction has followed earthquake-resistant building codes. However, builders can easily conceal cost-saving shortcuts unless they are directly and continuously observed by a trained and non-corruptible building inspector. Insurance markets are also plagued by information asymmetries resulting in problems of *adverse selection* (individuals at greater risk tend to purchase insurance) and *moral hazard* (once insured, individuals may adopt riskier behaviour). If these problems are severe, insurance markets may fail to develop, as is commonly the case for several types of

^h Social protection refers to policies designed to reduce people's exposure to risks, thereby enhancing their capacity to protect themselves against hazards and loss of income. Social protection policies include social insurance and social assistance.

ⁱ Public goods are formally defined as being free from rivalry and non-excludable. Non-rivalry means that consumption of the good by one individual does not reduce the availability of the good to others. Non-excludability means that no one can be effectively excluded from using the good. Individual participants operating alone do not have enough incentives to provide public goods because they cannot charge for the benefit that others gain when they share in the use of the good.

disaster risk such as the danger of floods. Information imbalances are very difficult to overcome, but may be eased through public policies that aim to enhance information provision, apply inspection regimes and enforce contracts.

- **Externalities.** There are many types of environmental activities in which actions that benefit one group of resource users impose external costs and risks on other groups. For example, deforestation in the headwaters of a drainage basin can increase the flooding risk for people living lower downstream. Policy measures are required to manage these externalities. For example, authorities can ban certain types of damaging environmental practises, or impose financial charges on those responsible at an equivalent level to the external costs they create (internalizing the externalities).
- **Behavioural factors.** Experiments in behavioural economics have demonstrated that individuals tend to discount low probability risks,¹¹ and would be unwilling to pay for related insurance or mitigation measures. Surveys of public attitudes towards hazards have also demonstrated that many people have limited awareness of the level of risk and measures that can prevent or mitigate it. These behavioural factors often explain public disinterest in disaster risk reduction, and require governments to act to raise awareness. Public perception surveys also show that people believe governments have a primary responsibility to protect them against the risk of disaster and to provide relief following one. This again may reduce people's willingness to insure themselves.
- **Coordination challenges.** Effective disaster risk reduction requires coordinated action by public and private participants across sectors. For example, managing flood risk depends on linkages between weather forecasting, hydrological management, water and sanitation authorities, environmental agencies, land users, community groups, planning departments and the emergency services. Disaster risks often operate across subnational or international boundaries requiring coordinated action by different authorities. Effective coordination usually requires government leadership, but also needs private sector and community-based involvement.

The above explanations are based on market failure. However, another set of arguments for public intervention in disaster risk reduction reflects concerns about social protection and poverty reduction. Poverty causes disaster risk because the poor tend to live in low-cost risky locations and usually cannot afford insurance. At the same time, poverty results from disasters that destroy assets and livelihoods. Therefore, governments concerned with social protection and reducing poverty will need to take a leading role in disaster risk reduction.

The previous points highlight the many market imperfections and social considerations inherent in disaster risk reduction that require a response in terms of government policy or other forms of collective action. The most important types of policy measures include: (1) providing public goods including risk assessment, infrastructure and regulation, (2) measures to tackle information asymmetries including supplying information, inspection systems and enforcing contracts, (3) substituting for missing insurance markets, (4) regulatory and pricing measures to address externalities, (5) public awareness campaigns and other interventions aimed at changing public attitudes to risk, (6) an organizational and legislative framework that can address the coordination challenges inherent in disaster risk reduction, and (7) additional action to protect low-income and otherwise vulnerable groups.

There is a clear need for public policy and collective action across all aspects of disaster risk reduction activities, including risk assessment, prevention and mitigation, risk transfer, disaster relief and reconstruction (see Table 1 below). Governments are likely to lead in

providing these measures, but other organized civil society and private sector groups also play an important role. Governments need to carry out the tasks in the Table below and must also coordinate the various aspects of disaster risk reduction and ensure concerted action between participants, as well as across sectors and geographical areas.

Table 1 – Types of public policy and collective action required for different aspects of disaster and risk management

Function	Market failures to be addressed	Types of public policy and collective action required
<p>1. Risk assessment</p> <p><i>Accurately identifying risks and communicating them to vulnerable populations</i></p>	<p>Information and research on risk is a public good</p> <p>Behavioural factors. Psychological tendency to discount catastrophic risk</p>	<p>Hazard and vulnerability assessment and mapping</p> <p>Awareness raising and communicating risks to vulnerable populations</p>
<p>2. Risk reduction (prevention and mitigation)</p> <p><i>Reducing the risk and impact of disasters</i></p>	<p>Externalities. Damage to the environment caused by one group places other groups at heightened risk (e.g. deforestation leading to flooding risk)</p> <p>Public good character of large scale structural works to prevent or mitigate risk</p> <p>Information asymmetries (e.g. in verifying building codes, enforcing planning rules)</p>	<p>Design and enforcement of environmental regulation, fiscal and other policy measures to discourage damaging environmental practises (e.g. protection of watershed areas)</p> <p>Public spending on building and maintaining structural measures (e.g. dikes and ditches). Community action to maintain structures</p> <p>Providing strict inspection regimes to enforce building standards (e.g. earthquake proofing)</p> <p>Appropriate planning and environmental zoning legislation</p>
<p>3. Risk transfer</p> <p><i>Mechanisms to ensure transferring risk to those able to bear the burden of it (e.g. insurance)</i></p>	<p>Insurance markets may fail to develop due to lack of purchasing power or because of problems of adverse selection, moral hazard and covariant risk</p>	<p>Policy measures to correct failures in insurance markets</p> <p>Offering assistance as a substitute for missing insurance markets, or as a social protection device for people who cannot afford insurance</p>
<p>4. Disaster preparedness</p> <p><i>Being ready to respond effectively to disasters and minimize their impact</i></p>	<p>Information on impending threats is a public good</p> <p>Social protection arguments for publicly providing search and rescue</p>	<p>Forecasting, early warning systems, evacuation procedures</p> <p>Maintaining readiness of rescue and relief services</p> <p>Community planning for emergency management</p> <p>Multi-agency coordination mechanisms</p>
<p>5. Post-disaster response and recovery</p> <p><i>Saving lives and assisting with reconstruction</i></p>	<p>Social protection, poverty reduction</p> <p>(Re)building public good structures and mechanisms to protect against future disasters</p>	<p>Disaster relief</p> <p>Assistance in post-disaster reconstruction</p>

4.2 Political incentive problems affecting disaster risk reduction

The previous Section explained the need for a wide range of policy actions to reduce the risk of disasters. However, experience has shown that implementing these policies is often difficult due to their financial costs and capacity constraints. The most important obstacles stem from lack of interest from policy- and decision-makers in government and other organized groups. Political interest depends on the strategies used by power holders to win, use and remain in their positions, and their calculations as to whether disaster risk reduction will contribute to these aims.

A fundamental problem is that political calculations often reflect short time horizons of a few years, whereas disaster risk and investments to prevent risk often play out over the long-term. Politicians will have limited immediate interest in DRR if it is not a prominent issue with voters and other political constituencies, and if it is not the focus of political protest. Another problem facing politicians is that disaster risk reduction policies may impose political costs, for example, when they require resettlement or other unpopular measures. There are also *opportunity costs* when DRR takes resources away from other activities that offer a more immediate way for power holders to gain support. Several types of political cost are explored in the following paragraphs.

Disincentives towards public goods provision. Public goods for disaster risk reduction offer significant collective benefits, yet they are typically underprovided by governments. The reason for this relates to political opportunity costs and the preference given to providing private goods as a tool of political patronage. In many political systems, power is gained and maintained through using patronage networks in which political power holders (patrons) channel resources and favours to groups of supporters (clients) in exchange for their continued loyalty.

This applies to autocratic systems where leaders depend on maintaining military and business elite loyalty, and to certain types of democratic systems in which winning votes depends on buying support by distributing benefits to particular sections of the electorate. Therefore, political systems based on patronage lead to a preference for providing private goods and more exclusive benefits (for example targeted subsidies and tax breaks) to obtain political support. Leaders in these systems do this instead of providing beneficial broadly inclusive public goods because those may not win votes as their effects are diffuse, less visible and may only occur in the long-term.

These disincentives are a major obstacle to effective disaster prevention because prevention depends heavily on investment in public goods. It is difficult to account fully for disaster prevention spending since preventative measures are built into the design of many types of infrastructure without being separately accounted for. However, there is widespread evidence that governments often fail to spend enough on disaster prevention. Examples from the four case studies undertaken for this report are shown in Box 1. In another 2009 four-country study, Alejandro de la Fuente¹⁴ found that pre-disaster spending is typically exceeded by post-disaster spending, although there are much larger year-on-year fluctuations in the latter.¹ Another study¹⁵ found that in 2000 that the United States federal government spent 20 times more on prevention than on disaster relief. However, in terms of net present value, evidence had proven that spending on prevention was ten times more

¹ The four case studies in de la Fuente's 2009 study were Colombia, Mexico, Nepal and Indonesia. In all countries except Colombia post-disaster spending was significantly greater than pre-disaster spending.

valuable than spending on relief. Several studies point to the high benefit-to-cost ratio of disaster prevention, although this finding is usually dependent on attaching value to human life as well as property.¹⁶

The incentives for spending on disaster prevention may depend on the visibility of the required public goods. Less visible activities such as environmental protection and enforcement, building inspections, high-quality risk assessment and participatory planning processes are likely to be particularly neglected. Large-scale infrastructure may be more popular because its public benefits are more widely perceived. There appears to be a particular political bias towards building physical barriers to protect against risks (e.g. levees) rather than conserving or enhancing natural barriers (e.g. mangrove swamps) that often provide better protection at lower cost. Large-scale infrastructure projects can yield visible public benefits over a few years and may reduce risk over the short term. However, if these are not conceived properly they can generate new patterns of risk over time. One example would be building large dams and irrigation canals that solve drought and flood problems, but over time, lead to new patterns of risk such as soil salinization.

Political incentives often result in underprovision of public goods and they also generate a bias towards spending public money on private goods. It is commonly observed that politicians take a great interest in post-disaster relief and rehabilitation (mainly private goods) when they had previously neglected pre-disaster preventative measures (mainly public goods). The appeal of disaster relief is probably explained by the political benefits that result from providing emergency assistance; a highly visible and targeted private 'good' that generates positive news coverage and meets citizens' demands for assistance.

Disaster relief can easily be used as a political tool by manipulating its distribution and by redirecting it in ways that reward supporters and punish opponents. A 2008 study¹⁷ found that following the 2004 cyclone Gafilo in Madagascar, communities where the majority of voters supported the President in the 2001 election were 65% more likely to receive disaster relief. The politicization of disaster relief is not restricted to developing countries, and has also been observed in the United States. A 2007 study by several economists¹⁸ found that politically-important states which supported the President were more likely to declare disasters (and therefore be eligible to receive Federal funds). They also noted that disaster expenditures were higher in states with congressional representatives on Federal Emergency Management Agency (FEMA) oversight committees.

Box 1 - The political bias in favour of disaster relief and post-disaster rehabilitation

Colombia: The Colombia case study shows a clear pattern of massive national spending on disaster relief and post-disaster rehabilitation. However, municipal levels focus on disaster prevention, for example, the retrofitting of schools in Bogotá to meet earthquake safety standards. The case study highlights how politicians use public and media attention paid to emergencies to increase their visibility, as these events are extensively covered by the media. This has led to a system that promotes providing direct support in emergencies from the central to the municipal level, possibly impeding the strengthening of DRR activities among regions and municipalities.

South Africa: In spite of strong legislation covering all aspects of DRR, there continues to be a strong bias in favour of disaster relief. During the case study research, respondents repeatedly stated that politicians do not prioritize DRR because they do not believe they will gain public support by doing so. Instead, they prefer to engage in disaster response and relief activities (referred to by one participant as 'the blanket and biscuit brigade'); they think these activities will bring better publicity and ultimately more votes in their favour. DRR is regarded as too intangible in comparison with the very real immediacy of disaster response. This perception is a key factor that undermines DRR progress in the country.

Rent-seeking and corruption. The effectiveness of disaster risk reduction policies can be further undermined by opportunities for rent seeking and corruption that arise during implementation. There are many ways to manipulate DRR regulatory measures to create opportunities for rent seeking and corruption. For example, when regulatory measures are imposed to control land use and building construction, opportunities will emerge to manipulate the process for private gain. In Colombia, land use plans aim to prevent building in risky locations and have a significant effect on land prices. Corrupt officials often manipulate this process to enable particular construction projects or to take advantage of financial gains that come from rezoning.

Additional corruption has come from officials avoiding building codes intended for earthquake proofing. Evidence from Turkish earthquake disasters indicates that collusion between corrupt contractors and corrupt building inspectors resulted in lax enforcement, with deadly consequences. Econometric evidence also points to this link between earthquake mortality and corruption indicators.^{9,11} However, Philip Keefer *et al*⁷ challenges this view by arguing that the typical problem in developing countries is not dishonest building inspectors, but the fact that such inspections do not take place – a consequence of weak incentives for governments to provide public goods.

Corruption also commonly affects DRR public procurement. This happens for large-scale infrastructure disaster prevention and mitigation projects where contractors and procurement officials may engage in bribery and inflate contract values. These risks are particularly apparent in the immediate post-disaster phase. For instance, after the 2004 tsunami in Aceh Indonesia, normal procurement rules were relaxed in the interests of rapidly mobilizing relief and reconstruction assistance. In 2005 Transparency International,¹³ a leading global anti-corruption civil society organization, revealed an extreme example of this when it described the aftermath of a 1980 Naples, Italy, earthquake. It offered evidence that the Italian mafia took control of the rebuilding process, siphoned off public funds and interfered in urban planning and building contract tendering processes. This resulted in many of the rebuilt buildings still failing to meet earthquake standards since building codes were ignored or were slow to be updated.

Political costs of controlling settlement and land use. A heightened disaster risk may justify temporary or permanent evacuation measures. Similarly, disaster prevention measures, such as building a flood control dam, may require permanent resettlement. However, these measures can be highly unpopular with affected populations that are strongly attached to their local area through historical, cultural and economic ties. Two problematic examples (in Colombia and Indonesia) were noted during the field work for this report (see Box 2). Similar opposition has also happened in high-income countries. For example, in 2010 local protestors in France staged demonstrations against government plans to relocate communities along parts of the Atlantic coast following devastating floods, destruction and deaths from the huge Atlantic storm Xynthia. Such opposition may discourage or delay action to evacuate dangerous areas, or may result in only partial resettlement solutions.

Significant political costs may also occur when regulators attempt to impose environmental and land use controls to prevent activities that create disaster risk. For example, this can happen when authorities ban logging on unstable hillsides or enforce controls on prawn farming in mangrove swamps.

Box 2 - Under the threat of volcanoes, but refusing to leave

Generally, inhabitants of a region expect support from the government in the event of a disaster. However, they are often unwilling to relocate as instructed by government. The Galeras volcano in southeast Colombia is a case in point. It is considered the most active volcano in the country and a 1993 eruption killed nine people, including six scientists who had descended into the volcano's crater to sample gases. In September 2010 when the field research was conducted for this report, regional populations were on a high eruption alert. The month before, the media had reported that fewer than 300 of 7000 nearby residents living at high risk had agreed to relocate.^k The refusal to move appeared to be based on misperceptions of the risk level since the area had been settled for many years without incident. Many residents also earned their living from agricultural lands close to the volcano.

A similar situation was observed in Indonesia where the Merapi volcano in central Java violently erupted in October 2010 during the field work for this report. On 25 October, 2010 the government raised the alert to its highest level and advised the threatened population to evacuate the zone. Despite the warnings the death toll from a series of eruptions increased to 275 within a month; a human cost that could have been avoided if warnings had been heeded.^l

The difficulties of evacuating areas surrounding volcanoes can be lessened through effective management and community participation planning in the relocation process. In The Philippines, the 2009-2010 eruption of Mount Mayon in Albay Province prompted a major evacuation effort that avoided any deaths.

Powerful interest groups that create environmental risks. Environmental practises that create disaster risk may be linked to activities of politically powerful groups and business interests. Through their lobbying power, political donations and position in patronage networks these groups often enjoy special access to natural resources. If authorities stand up to them and restrict their damaging environmental practises it can be politically costly, at least in the short term. However, the resulting environmental damage creates external forces that increase disaster risks for the broader population.

For example, in Indonesia over the last 40 years, timber and non-timber produce forest concessions and palm oil plantations have gone to a few at the cost of more traditional community-based ways of managing this resource. Over decades this has contributed to a higher risk of forest fires that affect the entire country. Politicians have found this problem politically difficult to handle as it requires government to confront powerful industry interests. Affected citizens' reform demands may also be weak because the links between particular environmental practises and disaster risks may not be generally perceived or understood.

Vested interests that block organizational reform. Complex coordination challenges are inherent in disaster risk reduction. This means that organizations charged with DRR responsibilities need to be reformed. However, any reforms are likely to be opposed during both the design and implementation phases as they threaten jobs and established power relations. For example, a central government may oppose decentralizing DRR disaster management to lower levels of government because it may fear losing power and resources. Transferring responsibilities to community groups and the private sector may encounter

^k<http://www.cnn.com/2010/WORLD/americas/08/25/colombia.volcano/index.html?hpt=Sbin>

^l<http://www.thejakartapost.com/news/2010/11/18/death-toll-fromindonesia039s-volcano-climbs-275.html>

similar resistance. In addition, measures to improve intersectoral coordination or to mainstream DRR responsibilities across government are also likely to disrupt established relationships and centres of power; the bureaucrats may resist. Public sector workers affected by DRR reforms can also act as a powerful anti-reform lobby. They can pressure political leaders, to decide that organizational reform is too politically costly, despite its potential benefits.

Political costs of disasters. All of the above political costs undermine incentives for adopting disaster risk reduction policies. However, when disasters occur they do impose political costs on leaders. This should provide positive incentives for DRR. However, any positive incentive effect may be counteracted by the negative incentives outlined above.

Meanwhile, various studies have revealed another possible political cost of disaster; the increased likelihood of post-disaster leadership change. In 2010, Smith and Flores¹² reported that between 1976 and 2007, 40% of democratic nations replaced their leader in any two-year period. However, this figure rose to 91% in the two years following an earthquake. They noted that regime change happened less often in autocratic states, but was also much more likely to occur following an earthquake.

There are two main reasons that disasters have political costs. First, citizens may stop supporting leaders they hold responsible for disasters. Second, disasters can act as a catalyst for political protest because they often bring people into the streets, require communities to organize and help themselves, and frequently reveal the limited presence and power of the state.

There is rather mixed evidence on the first reason. There are some cases in which citizens have blamed their leaders for failing to prevent disasters. For example, in 2005 Transparency International¹³ reported that in Turkey during the 1990s repeated earthquakes led to a wave of public anger and media outcry at the widespread corruption that had allowed builders to escape following statutory building codes. However, most evidence suggests that people tend to be much more concerned about their government's disaster relief performance rather than its preparedness or prevention activities.

Healy and Malhotra's¹⁵ 2009 study of disasters in the United States indicated that voters tend to hold the incumbent presidential party accountable for disaster relief, but not for disaster preparedness. Other studies suggest that people tend to blame their leaders for disasters irrespective of their performance in disaster risk reduction. Research from India shows that politicians from the incumbent ruling party generally lose support following rain-related disasters. According to authors Shawn Cole, Andrew Healy and Eric Werker,¹⁹ the probability of expulsion is lower when government provides large amounts of relief and rehabilitation assistance, but they note the effect of this is modest

As for the second reason, disasters often trigger political protest. In a 2010 journal article, Flores and Smith⁸ described the September 1985 earthquake in Mexico City where the government's limited rescue and relief effort led to creation of a large self-help movement. It grew into political protest with more than 40,000 people marching on the presidential palace. Cross-country econometric evidence suggests that in more autocratic states the probability of political protest and regime change is determined by the frequency of disasters. In more democratic states this probability is affected more by the number of people killed in the disaster.⁸ This suggests that in autocratic states disasters play an important role in creating the enabling conditions for political protest, In democratic states, protests stem from people holding their leaders to account for deaths caused by disasters.

5 The drivers of disaster risk reduction

The previous Section explained the role of political economy in disaster risk reduction. It argued that policies for disaster risk reduction need to address inherent coordination challenges, problems of market failure and concerns about social equity. There are political incentives and disincentives that determine if these policies are likely to be adopted and implemented. The purpose of this Section is to identify the political and economic factors – referred to as drivers – that may shift the balance of incentives in favour of disaster risk reduction.

This Section follows established frameworks for political economy analysis used by development organizations, and categorizes the drivers under three headings: structures, institutions and political processes.^m

- **Structures** are fundamental features of the country context and political economy that tend to change slowly and cannot be readily influenced over the short- to medium- term.
- **Institutions** constitute the *rules of the game* and are defined as the formal and informal rules and relationships that govern the behaviour of agents. Formal institutions include the legally defined organs of government and the political apparatus including legislation, and its organizations for disaster risk reduction. Informal institutions refer to how rules and relationships operate in practise in accordance with cultural values and traditions such as the ways politicians campaign for votes and the norms by which patronage operates.
- **Political processes** describe the *games within the rules* and are the strategies used by individuals and groups to advance their interests in the framework of structures and institutions. These processes involve a combination of bargaining and conflict and cooperation between interest groups over the use, production and distribution of resources.

The following sub-sections address each of these headings in turn.

5.1 Structures

This Section examines how the following structural factors affect political incentives:

- 4) the nature of disaster risk (including the type of natural hazard, the severity of the risk and the distinction between intensive and extensive risk);
- 5) political geography (including variations in the reach of the state and the political balance between the ‘voice’ of the central authority and the ‘voice’ of remote regions);
- 6) social structures (disaster risk is often determined by social inequalities and ethnic divisions);

^m These headings are adapted from the UK Department for International Development’s Drivers of Change framework, and the Netherlands Ministry of Foreign Affairs’ Strategic Governance and Corruption Assessment (SGACA).

- 7) state fragility (the connection between a state's fragility and its lack of capacity to engage in DRR);
- 8) cultural beliefs and practises.

The nature of disaster risks, including their severity and type, are an important influence on the strength of political incentives for disaster risk reduction. A **severe disaster risk** means there is greater economic justification and political incentive to adopt disaster risk reduction policies. This is demonstrated by econometric evidence (see Section 3) that more earthquake-prone countries tend to suffer lower mortality per equivalent disaster than countries with lower seismic risk.⁷ The severity of disaster risk has been estimated in the UN International Strategy for Disaster Reduction's (UNISDR) Global Assessment Report for Disaster Risk Reduction 2009 in terms of the percentage of GDP exposed per year to disasters.

The results of this exercise also suggest that the countries experiencing higher levels of risk tend to have stronger disaster risk reduction systems. For example, Bangladesh ranks as the most exposed country for flood risks (12.5% of GDP exposed per year), but at the same time, it has well developed systems for flood mitigation, preparedness and response.²⁰ This is despite the country's severe governance challenges that might be expected to weaken the effectiveness of DRR. There are other examples of highly flood-prone countries with relatively strong DRR systems, including The Philippines, Thailand and Vietnam that all figure in the top six countries most exposed to flood risk. Another example is hurricane- and earthquake- prone Caribbean countries that have pioneered the development of a multi country risk pool – the 16-member Caribbean Catastrophe Risk Insurance Facility (CCRIF).

Political incentives are also shaped by the **type of disaster risk**, including the difference between **intensive and extensive risk**. Intensive risk comes from large concentrations of people and economic activities being exposed to intense hazard events. These can lead to potentially catastrophic disaster impacts with many deaths and asset losses. Extensive risk refers to the widespread risk associated with dispersed populations being exposed to often very localized repeated or persistent low or moderately intense hazard conditions that can lead to debilitating cumulative disaster impacts.ⁿ

For example, a major earthquake that affects a highly populated area would be classed as intensive risk, whereas localized low-intensity flooding would qualify as an extensive risk. Both types of disaster risk can generate political incentives. However, intensive risk is more likely to generate strong political incentives because it affects large numbers of people, is concentrated in time and space, and results in large economic losses. Extensive risk will only result in political pressure when its effects are visible, of major economic significance, and if affected populations can act together and find political 'voice'. The experiences of the four case-study countries do appear to support the hypothesis that politicians will be most concerned with intensive risk events.

The more active disaster risk reduction programmes documented in the four countries were all associated with intensive risk disasters. These included earthquake hazards in Bogotá and the coffee region of Colombia, seismic and volcanic hazards in central Java, Indonesia, and large-scale flooding risks in Mozambique. Conversely, the lower political priority attached to disaster risk reduction in South Africa may stem from the fact that disaster risk in

ⁿ UNISDR definitions have been adopted here: <http://www.unisdr.org/eng/terminology/UNISDR-terminology-2009-eng.pdf>.

the country is mainly extensive. Box 3 describes the different treatment of intensive and extensive risks in Colombia.

Box 3 - Intensive and extensive risks in Colombia

The Colombia case study documented the substantial progress made in strengthening DRR systems in Bogotá and other major cities (Armenia, Manizales and Medellín) that experience intensive seismic risk. In particular, Bogotá has given high priority to disaster risk reduction under the political leadership of mayors Mockus and Garzon. This includes a major programme to reduce the earthquake vulnerability of school buildings.

Elsewhere, the La Mojana region close to the Caribbean coast and the Magdalena, Cauca and San Jorge rivers face widespread and repeated flooding. These are low mortality events that destroy fewer than 500 properties each and are classed as extensive risk events. Governments have not made them a political priority and effective systems for disaster risk reduction have not been developed in this region. However, the collective impact of these floods over time and across the region has imposed a severe human and economic cost. In light of this, UNDP is currently working on a programme to strengthen disaster risk reduction in the Caribbean Region.

The comparison of these two examples appears to confirm the prediction that intensive risk generates more powerful political incentives, and that extensive risks are likely to be neglected despite their large cumulative impact. However, there are other factors at work that may also explain the differences observed in Colombia. Residents who live in the relatively wealthy capital city of Bogotá enjoy much stronger political voice than the fishing communities in the much poorer and remote La Mojana region. The government's control there is more tenuous and a rebel group is active in the area.

Several other attributes of disaster risk affect political incentives. Disasters that can be forecast ahead, such as a hurricane or volcanic eruption, create relatively strong political incentives for DRR. The failure to ensure adequate preparedness against such predictable risks would indicate obvious negligence on the part of government, expose leaders to heavy criticism and thus create a very high political cost. Slow onset disasters such as droughts may be easier to plan and prepare for than a sudden onset disaster, such as an earthquake. However, slow onset events often receive less political attention because they have a creeping more extensive nature and they tend to affect poorer and more vulnerable households. The Mozambique case study noted that the country's DRR systems are generally strong, but that authorities were neglecting drought risks.

It is also worth considering how various response strategies required for different types of disaster risk affect political incentives. For example, the types of measures required to protect people and property against hurricanes generally do not generate political opposition. They entail limited disruption to people's lives; at worst the occasional temporary evacuation. However, other types of risks require more drastic measures that do generate opposition, for example when a government orders permanent resettlement away from flood-prone areas.

Climate change will affect disaster risks and may cause more frequent and severe disasters. Such predictions may be expected to strengthen political incentives for disaster risk reduction and other policies for climate change adaptation. However, the four country case studies undertaken for this report did not find a strong link between disaster risk reduction and climate change adaptation. Many countries are devising climate change adaptation strategies, but the incentives appear to stem mainly from the prospect of their

gaining access to additional international funds rather than strong pressure that develops from domestic political processes. There are some exceptions when climate change adaptation programmes do appear to have been home grown in response to local concerns. For example, the adaptation study in Albay province in The Philippines formed part of an active programme for disaster risk reduction.

Structural factors also emerge from a country's **political geography** – the relationship between the state, its territory and population – and may result in the uneven adoption of disaster risk reduction policies across regions. Disaster risk reduction policies are often most effectively implemented in central and urbanized regions where political and economic interests are concentrated and the state has its strongest presence. More peripheral regions may be neglected for a number of reasons including their political and economic marginality, the presence of ethnic minority groups that lack political clout, insecurity and ongoing conflict and the limited presence of the state.

For example, major differences in the strength of DRR systems have been observed in Colombia between the capital city, Bogotá and the flood-prone La Mojana region (see Box 3). In Indonesia, the most effective disaster risk reduction systems are in Central Java and Western Sumatra – both well connected regions with high population density. More remote regions are less well covered; a recent tsunami in the Mentawai islands revealed gaps in the country's early warning system.^o Separatist conflict in Aceh province prior to the 2004 tsunami there also led to disaster risk reduction being neglected in this area. However, the disaster proved to be a decisive factor in bolstering the peace process and renewed engagement in DRR in the province.

Social structures – related to divisions defined by religion, ethnicity and income groups – have an important effect on political incentives for disaster risk reduction. The poor tend to be particularly exposed and vulnerable to disaster risks. Their low incomes and need to live close to sources of work often force them to occupy housing in unsafe locations. For example, in Colombian cities informal settlements have sprung up on floodplains and unstable slopes. This trend has been driven by the arrival of migrants leaving parts of the country affected by conflict and insecurity.

Many cities in developing countries have failed to address the disaster risks associated with informal settlements. There are many reasons for this situation, but the most fundamental cause is the weak political 'voice' of slum dwellers and the resulting lack of political incentives to respond to the risks they face. In some cases, these inequalities are compounded by other forms of social division. For instance, in South Africa the legacy of apartheid means that the black population is concentrated in townships often in unsafe locations such as the Cape Flats which suffers repeated winter flooding.

State fragility, social breakdown and disorder can act to undermine disaster risk reduction by weakening political incentives and limiting the possibility of collective action. In Haiti, the devastating impact of the 2010 earthquake was caused by many factors, but the most fundamental causes were the effects of decades of social and political division and unrest. The consequent breakdown of state capacity and social capital undermined systems for disaster prevention and preparedness, and have made the relief and reconstruction effort more difficult. Social disorder following the disaster raises additional challenges in rebuilding social capital and state capacity. Therefore, the Haiti example points to the close and mutually reinforcing connections between disasters and state fragility.

^o Guardian 29 October 2010, Indonesian tsunami warning system 'did not cover remote islands', <http://www.guardian.co.uk/world/2010/oct/28/indonesia-tsunami-warning-system-vandalised>

Cultural beliefs and practices have important effects on attitudes to risk. Generalizations are difficult because the effects are complex and vary greatly between societies. However, several examples noted for this report (see Box 4) point to the role of spiritual and religious beliefs in creating a fatalistic sense that disasters are “acts of god” that are beyond the realm of science and policy intervention. Therefore, their effect may be to weaken political incentives for disaster risk reduction. However, more positive outcomes are possible when traditional and religious leaders can be brought into disaster risk reduction programmes and use their authority to communicate key DRR messages. In Mozambique for example, the Government actively involves local chiefs in conveying messages about DRR, particularly in relation to resettlement, which is often a highly controversial issue.

Box 4 - The role of cultural beliefs and practices

Fieldwork conducted for this report revealed several examples of cultural beliefs about disasters that have implications for disaster risk management.

In Indonesia, the Merapi volcano is a sacred site for many Javanese. On 25 October 2010 the Indonesian government issued its highest level alert for a Mount Merapi eruption and warned villagers in threatened areas to evacuate. According to some officials, many villagers refused to leave because they were following the example set by the spiritual guardian or ‘gatekeeper’ of the volcano, Mbah Maridjan. The Sultan of Yogyakarta appoints a villager to take this traditional role in order to appease the volcano's hidden spirits. During the 2006 eruption Mbah Maridjan refused to evacuate. He was seriously injured during the eruption, but earned popular admiration for his sense of duty and power in managing the spirits. He took the same stand during the 2010 eruption and on October 26 was killed by a pyroclastic flow, along with 13 people who were trying to convince him to leave.^p

Interviews in Indonesia also showed that some religious political parties believe that natural disasters are solely under the power of Allah. Disaster risk reduction emphasizes the role of human control and runs contrary to such beliefs. In the context of political competition, this may be seen as a threat to the power and influence of religious conservatives.

In Colombia, attitudes towards disasters are also coloured by spiritual and religious beliefs. In May 1989, the Mayor of Pasto, a city close to the Galeras volcano, threw 2000 medals of Our Lady of Mercy into the volcano as a shield against the calamity. His religious act reportedly calmed expressions of fear, panic and dismay.^q

^p <http://www.bbc.co.uk/news/world-asia-pacific-11646879>

^q <http://historico.elpais.com.co/paisonline/notas/Mayo302005/A230N1.html>

5.2 Institutions

This Section examines how incentives are shaped by a combination of formal and informal institutions.^f These include:

Formal institutions:

- disaster risk reduction legislation;
- organizational arrangements for disaster risk reduction, including decentralization.

Informal institutions:

- Political competition and patronage.

Legislation on disaster risk reduction codifies the formal rules governing the roles and responsibilities of different DRR agencies, provides legal backing to regulatory and planning measures, and imposes sanctions against those who fail to meet the rules. From the perspective of political economy analysis, legislation is viewed as the outcome of a political process rather than a driver in its own right. In practise, governments often fail to adhere to or fully implement DRR legislation, and do not suffer much political cost. They often believe that passing a new law expresses a visible commitment to DRR, but then fail to put the resources in place to enable satisfactory implementation.

There are commonly observed inadequacies in DRR legislation that tend to focus mainly on response preparedness and rather less on risk reduction. Integration may also be lacking with laws relevant to DRR in specific sectors such the water and environment. However, despite these often observed inadequacies, legislation can play a useful role in strengthening incentives for DRR. Legislation can provide a lock-in effect that reinforces a government's commitments by making it politically costly to evade the written rules. It can also give judicial bodies, civil society organizations and watchdogs the possibility of calling leaders to account as legislation provides a yardstick to measure whether government has met its declared rules and standards.

The evidence from the case studies conducted for this report provides a mixed view on the role of legislation in strengthening political commitment to disaster risk reduction. In Colombia and Indonesia, well developed legislation exists and was commonly cited as a factor contributing to the progress made in disaster risk reduction. For example, in Colombia, the DRR legislation makes politicians personally liable for the safety of their constituents from disasters.^s Similar legislation is in place in Indonesia where the new disaster management law sanctions negligent behaviour on the part of individuals whose behaviour contributed to disasters.

^f Formal institutions are understood as written laws, regulations, legal agreements, statutes, contracts and constitutions, which are enforced by third parties. Informal institutions are (usually unwritten) norms, customary practises, standard operating procedures, routines, conventions and traditions that are often deeply embedded in a culture and its associated ideology. In practise, incentives tend to reflect a mix of both formal and informal institutions.

^s Lawyers have recently filed a lawsuit against the Colombian Government over the failure of a critical dike that worsened the 2010 flooding in the north of the country. In Chile, the country's former President, Michelle Bachelet, and other senior government officials face possible legal action over failings in the country's tsunami warning system (AlertNet 16 February 2011 and 17 February 2011).

In practise, implementation of DRR legislation has been rather mixed. In Indonesia, lack of familiarity with the new legislation may explain implementation gaps. In South Africa, the 2002 Disaster Management Act and the 2005 Disaster Management Framework provide a strong legal framework for disaster risk reduction. However, it is commonly agreed that implementation has fallen far short of the intention of the law because there has been little political interest in disaster risk reduction. On the other hand, Mozambique has no DRR legislation (although this is planned), but has developed an effective DRR system based on administrative forms of accountability and enforcement. Taken together, these examples indicate that legislation alone is not a driver of disaster reduction. However, when political incentives are generally supportive, legislation plays a valuable reinforcing role, and can help to lock-in progress and thereby reduce the risk of backsliding.

Organizational arrangements. Disaster Risk Reduction poses particular organizational challenges because it is a cross-cutting activity that must be coordinated across many parts of the public and private sector. Section 4.1 spelled out the need for coordination between different sectors, levels of government, neighbouring territories, the public and private sectors, as well as with civil society. Furthermore, disaster risk reduction cannot be conceived as a separate activity that can be bolted on to other administrative functions. It is a set of principles and priorities that need to be integrated across government and by other key participants.²⁰

The practical difficulties of ensuring coordination have sparked debate on which aspect of government should be responsible for disaster risk reduction and how it should be organized. Some governments have pursued the model of creating a high profile 'nodal unit' with a strong political mandate to coordinate action across government. Others have pursued a more mainstream approach in which a relevant line ministry is responsible for disaster risk reduction which is then coordinated through a horizontal network or committee structure. Examples on coordination from the case studies and elsewhere are described in Box 5 below. The general lesson appears to be that there is no single best practise and, depending on the functions required, there may be advantages to combining elements of both systems.

Varied international experience with different organizational models for disaster risk reduction suggests that in many cases there is scope to improve the functioning of DRR systems through organizational reforms. However, there is no blueprint model, and reforms will need to be adapted to each local context and administrative traditions. It is also apparent that effective organizational arrangements are a necessary condition for disaster risk reduction. However, alone they are not enough since DRR is fundamentally driven by political incentives. Organizational reform on its own does not create political incentives, but the success or failure of DRR will depend on whether these incentives are in place.

In the same way as DRR legislation, organizational improvements may also have a reinforcing effect on political incentives. This can operate in several ways. For example, the creation of a high profile DRR nodal unit concentrates the political 'voice' of administrators and professionals who are committed to DRR. These reforms may also enable more effective communication of DRR messages to the public, thereby raising citizens' expectations of government performance and strengthening demand for change.

Box 5 - The organizational focus of disaster risk reduction – country examples

Colombia: In 1988, in the wake of the Armero and Popayan tragedies, a new legal framework for DRR established the National System for Disaster Prevention and Response. This is regarded as something of an organizational model for DRR. It combines elements of a multisectoral and decentralized system with a strong apex structure, the National Risk Direction directly under the President, and includes technical and operations committees with representation from all major ministries. The system is replicated at lower levels of government through regional and local committees. In practise, departmental governors and municipal mayors have played a leading role in establishing robust DRR systems at these levels.

South Africa: The National Disaster Management Centre (NDMC) is the lead agency for implementing DRR in South Africa. The NDMC is currently in the Department for Co-operative Governance and Traditional Affairs (CoGTA) which was formerly the Department of Provincial and Local Government. Many interviewees stated the NDMC is wrongly placed in CoGTA, which is perceived as having a low political profile. As a Directorate within a national department, the NDMC also does not have the authority to demand compliance and action from other national departments. Placing the NDMC in CoGTA, and previously in the DPLG, was intended to help facilitate decentralized DRR. However, links between the NDMC and local levels of government are generally weak since each sphere of government in South Africa is semi-autonomous.

Indonesia – Following the new Law 24 of 2007, Indonesia created a National Agency for Disaster Management which also has regional offices at the provincial level. It is rather early to judge the impact of the new organizational structure, but the Indonesia case study raises concerns that creating a new standalone office for DRR has reduced the sense of responsibility of other agencies for disaster risk reduction. Furthermore, the division of responsibilities between provincial and local levels has not been adequately defined.

Mozambique has a comprehensive and mainstreamed approach to Disaster Risk Reduction. It is led by the Coordinating Council of Disaster Management – an interministerial forum chaired by the Prime Minister and attended by many Ministers. The Council undertakes political work on DRR, for example approving the main policies and strategies. The National Institute for Disaster Management (INGC) is the Coordinating Council's Secretariat and sits within the Ministry for State Administration. There is also a Technical Council of Disaster Management chaired by the Director of the INGC. This is a multisectoral forum which convenes once a month to discuss disaster management and DRR issues. The Technical Council contains the National Directors of the ministries represented in the Coordinating Council. Mozambique's system is notable in the sense that it is decentralized, with the INGC handling effective local level operations.

Bangladesh: In 2003, the ministries of food and disaster management and relief were merged to create a new lead ministry in disaster management, the Ministry of Food and Disaster Management (MoFDM). The merger has resulted in better DRR management, but the MoFDM is not represented on key central government planning boards, such as the National Economic Council and the Economic Affairs Committee. Therefore, it does not have the necessary political influence to drive DRR mainstreaming across government departments. Disaster relief is still its main activity. Several disaster management institutions have been set up to handle policy and coordination including the National Disaster Management Council (NDMC) that provides overall direction for disaster management; the National Disaster Management Advisory Committee, and interministerial disaster management coordination committees that implement NDMC policies and decisions and coordinate the work of different government departments on disaster management. These inter-institutional coordination mechanisms are used more often to coordinate emergency response activities rather than DRR measures, but this is slowly changing.

(Source: UNDP, 2010, Annex 1.1)

Decentralization. There is wide diversity between countries in how various disaster risk reduction functions have been decentralized to lower levels of government. This is explored further in the companion report prepared as background for the Global Assessment Report.¹ There are several theoretical benefits of decentralization that could help to resolve some of the political incentive problems identified in this report. These include the possibility of more active citizen participation in local DRR policies and programmes, the potential for stronger public accountability in local settings where decision-makers and service providers are closer and more accessible to the populations they serve, and the stronger alignment of interests between local politicians and citizens who are exposed to the same disaster risks.

However, the companion report does not find clear evidence of decentralization benefits from the four country case studies. In practise, the advantages are often outweighed by local capacity constraints, coordination problems between different levels of government, financing difficulties, and low citizen DRR participation in programmes and policy making.¹

Political competition has an important effect on the incentives to adopt disaster risk reduction policies. The empirical evidence reviewed in Section 3 shows there are significant differences in disaster mortality between democracies and autocracies. The explanations provided in Section 4.2 show there is stronger pressure for accountability in democratic systems, and greater incentives for public goods provision when political leaders face demands from the broad electorate. However, there are also 'rules of the game', political pressures and interests in autocratic systems that can be harnessed to strengthen incentives for DRR. In all types of political regimes, the occurrence of a disaster appears to intensify political competition, sometimes by acting as a catalyst for mass political protest, and sometimes by causing political incumbents to be punished at the polls.

All the case study countries used in this report are democracies, and it is interesting to consider how disaster risk reduction has figured in their political debate and competition. Overall, disaster risk reduction has not recently been a major national electoral issue in any of the four countries. However, this does not disprove assertions that political competition makes governments more responsive to DRR, and may simply reflect the limited sample size and the particular nature of disaster risk and democracy in the four countries. Colombia has a strong democratic tradition and disaster risk reduction has been an electoral issue in municipal elections in cities exposed to disaster risk, but is much less prominent as a national issue. South Africa also has strong democratic institutions, but the relatively low and extensive nature of disaster risk has resulted in DRR not featuring in political competition.

In Indonesia, the much higher level of disaster risk might have been expected to raise the profile of disaster risk reduction as an electoral issue. However, the country's authoritarian past means that democratic traditions are weakly embedded which means that there are only weak demands on politicians for DRR or other public goods. In Mozambique, democratic competition does not appear to explain the relatively strong DRR system. It has been driven by the top-down concerns of political leaders rather than by citizen pressure. In practise, the dominance of the Liberation Front of Mozambique (FRELIMO) party means that electoral competition exerts only weak pressure on political leaders.

There are other examples of political competition that shed light on disaster risk management. For example, in Bangladesh political leaders and the media are pressing the government on the country's vulnerability to disasters and government effectiveness in providing relief. In Albay province in The Philippines, the current Governor, Joey Salceda, is an important DRR advocate, and he has used DRR issues to bolster his political profile.

The evidence on the importance of political competition is somewhat mixed. Global comparative studies using econometric techniques detect broad differences between democratic and autocratic systems in terms of disaster mortality. However, there are clear exceptions, including the cases of Cuba and Vietnam – countries considered undemocratic but regarded as strong performers in DRR. Conversely, the existence of democracy does not guarantee that disaster risk reduction will be a political priority, especially if risk is extensive, there is no recent memory of disasters and voters are not interested. The critical question is whether political leaders believe that at some point they may be called to account for their failure to prevent or respond to a disaster. These pressures are more likely to be present in democracies, but not exclusively so.

The effect of political competition will also depend whether competition follows the ‘logic’ of patronage. In countries with a highly entrenched system of political patronage, politicians will tend to respond to narrow groups of supporters rather than the broader public interest (see Section 5.2). In this context, electoral competition can generate strong pressures for private goods provision at the expense of public goods, and direct funds towards programmes that win votes (such as government handouts and high visibility infrastructure) to the detriment of important ingredients of effective DRR, such as capacity building, organizational development and community-based DRR.

5.3 Political processes

The adoption of disaster reduction policies can be viewed as an outcome of the cut and thrust of political processes that involve the interaction of different stakeholders in the context of institutions and structural factors. The literature reviewed for this report and the case study evidence highlights some key features of political processes that drive the creation of disaster risk reduction policies.

- Disasters can trigger political change by creating conditions for protest movements and by altering voting behaviour (Section 4.2).
- Political pressures for improved DRR policies are strongest in the immediate aftermath of major disasters and diminish thereafter. This has been a major factor in Colombia where the Armero and Popayan tragedies in the 1980s provided the main impetus for strengthening DRR systems, including the creation of the Disaster Risk Management Office. As the memory of these disasters faded over time, the status of the DRM office has declined and its location has correspondingly shifted from the Office of the President to a vice ministry.
- There are several cases in which political leaders’ attitudes towards DRR appear to have shifted following the presentation of evidence on actual or potential economic losses arising from disasters. This evidence may strengthen the view that DRR is in the self-interest of political leaders who need to maintain access to resources and fiscal assets. The case study countries’ experiences support this view. In Mozambique, the experience of much slower growth following the 2000 floods has been an important factor in generating high-level political support for DRR. Similarly in Bogotá, Colombia, several 1990s studies showed its very high fiscal vulnerability to earthquakes. These appear to have influenced Mayor Mockus who has become a vigorous proponent of disaster risk reduction.
- Individual ‘champions’ of disaster risk reduction can play a decisive role in driving the adoption of DRR policies. Several examples have been observed in the case study countries, including Colombia’s President Virgilio Barco who established the Disaster

Risk Management Office; Bogotá's Mayor Antanas Mockus (1995-1998); and Mozambique's Paulo Zucula, the former Director of the National Disaster Management Institute (INGC). Strong organizations can also be important drivers of DRR policies. For example, the INGC in Mozambique is regarded as strong performer and has received major donor funds.

- Citizen pressure can play an important role in driving the adoption of DRR policies. However, in the cases examined for this report, citizen pressure has generally been quite limited except in the direct aftermath of disasters. In Mozambique and South Africa, the case studies note that citizens are generally not interested in DRR, or have actively disengaged when they perceive a threat of being resettled. Communities can mobilize to support DRR, but often only when governments and development agencies play a facilitating role.

For example, the city of Bogotá has organized very successful earthquake drills of three million people. These have served as an important rallying point and means to raise public interest in the DRR agenda. In Mozambique, community groups have participated in managing government-sponsored early warning systems and flood mitigation measures. Mexico provides another instance where UNDP's Disaster Risk Management Programme has created a bottom-up decentralized approach to community and civil society engagement in DRR.

- Another source of demand for disaster risk reduction may come from the political elite itself, if there is little or no strong overall citizen pressure. This may be strongest when the elite faces similar disaster risks as the population at large, or when it fears the politically destabilizing effects of a natural disaster.
- Organized civil society groups have played a somewhat limited role in advocating for disaster risk reduction. However, there are some exceptions, in particular the role of academics discussed in Box 6. The media potentially plays an important role, although journalists tend to focus on disasters as dramatic events and human tragedies, while paying much less attention to DRR issues.

Box 6 - The role of academics in driving disaster risk reduction

Academics can play a key role in the DRR debate by creating and maintaining political awareness, providing information for public decision-makers and bolstering DRR understanding among the population. Academic participation can increase DRR technical capabilities and generate high-quality information and standardized methodologies. In addition, academics play a very important role as external participants, unaffected by political changes, and allowing for continuity of the DRR agenda. However, cross country experience suggests the role of academics in promoting DRR is highly variable. It depends on the extent to which they form working relationships with government and communities, and are able to communicate their findings through professional networks, the media and connections with government.

In Colombia, for years academics have been actively involved in generating disaster risk information, including the National University of Caldas in Manizales, the School of Administration, Finance and Technology (EAFIT) in Medellín, and the University of Los Andes in Bogotá. This is also the case in Yogyakarta, Indonesia where the university has played a crucial role in creating a disaster management system for the region. When the Merapi volcano erupted in October 2010, the university was actively involved in monitoring it and providing crucial information to guide the evacuation process.

6 Conclusions and recommendations

This final Section of this report addresses three questions:

- What are the most important political economy drivers of effective disaster risk reduction?
- What are the main unanswered questions and priorities for future research on the political economy of disaster risk reduction?
- What are the implications of this analysis for the DRR programming of external agencies?

What are the most important political economy drivers of effective disaster risk reduction?

This report has argued that adopting disaster risk reduction policies fundamentally depends on factors emerging from the domestic political economy. This perspective has far reaching implications because it suggests that existing practise will not be enough to strengthen DRR unless the problem of political incentives receives more serious attention. Funding organizations have tended to treat disaster risk reduction as a technical issue that mainly requires capacity building and organizational development support. These actions are an important part of a broad package of measures, but on their own they will not generate the necessary political commitment to DRR.

The use of political economy analysis can help to identify and strengthen particular drivers that can shift political incentives in favour of DRR. These drivers will be context-specific, and will vary in importance according to structural factors, formal and informal institutions and the nature of the political process. There is no blueprint for encouraging the adoption of disaster risk reduction. Advice that may be appropriate in one setting may not be relevant in another. There will also be different opportunities and constraints depending on the nature of disaster risk and the political economy context.

Therefore, country-focused analysis will be needed to identify the particular drivers of disaster risk reduction and their relative importance in different contexts. In undertaking this analysis it will be worth re-examining the key issues highlighted in this report and their DRR policy implications.

The most important drivers and obstacles for change are likely to be in the following areas:

The nature of political competition. Effective disaster risk reduction is possible in both democratic and autocratic political systems. In practise, in democratic states electoral competition is often a rather weak source of pressure on politicians to implement effective DRR. However, democracy does provide a basis for creating stronger accountability, in particular where there is good information on disaster risk reduction, voter engagement with the issue and public scrutiny of government performance. In autocratic political systems, pressures for accountability may be more limited. However, political leaders may be responsive to DRR needs for reasons of self-interest, i.e. evidence of the economic and fiscal costs of disasters, and the heightened risk of popular unrest in their aftermath.

The extent of patronage politics. Political patronage has been identified as a key obstacle to implementing comprehensive strategies for disaster risk reduction. When a country's political competition follows a patronage model, DRR policies are likely to be distorted through underprovision of the public goods required for disaster prevention, and neglect of community mobilization, capacity building, etc.). In severe situations, patronage politics have led to rampant corruption and rent seeking that have undermined DRR. In practise, the constraints imposed by patronage politics vary greatly between countries, but progress can be made in different aspects of DRR depending on the nature and strength of patronage systems.

Variations in political geography, disaster risk and 'voice'. In many countries, disaster risk is concentrated in areas inhabited by poor and marginalized communities that lack political voice. However, the country's wealthier regions may also be exposed to disaster risk. Understanding these variations in political geography and patterns of risk is often key to establishing the potential for improved DRR, and for developing effective intervention strategies.

Citizen pressure for improved DRR. The strongest DRR systems are often based on direct citizen and community involvement in specific DRR activities. These create potential for citizens to exert pressure on government agencies as a means to drive policy change from the bottom up. In practise, the extent of citizen pressure and community involvement in DRR will depend on the nature of the political system, the extent of democratic rights and the permitted arena of political activity, as well as the strength of public awareness of disaster risks. Even in open democratic systems, citizen interest and engagement in DRR is often rather weak. However, there is potential to build on this as a means of generating sustained pressure for improved DRR.

Horizontal pressure for improved DRR. Demand for improved DRR often stems from horizontal sources of pressure, including the role of academic institutions, scientific bodies, the media and advocacy organizations, and concerns expressed by elite groups in relation to their own safety. Demand will be strongest when these groups work in coalition. For instance, links between the media and scientists can enable more effective communication of scientific study results. The opportunities to work with these 'horizontal' sources of demand are often more immediate than seeking to build bottom-up citizen pressure or voter engagement.

Existence of DRR 'champions'. In many countries, particular individuals have played a decisive role in promoting DRR reforms and institution building. The existence of these 'champions' provides a more favourable environment for obtaining international support, but their influence may not be permanent. There is a risk of placing too much optimism in the potential of individuals to bring about change, while downplaying the role of more systemic constraints.

What are the main unanswered questions and priorities for future research on the political economy of disaster risk reduction?

This report has demonstrated the importance of in-depth analysis of the political economy of disaster risk reduction. However, this is a rather new area of enquiry and there are many questions that remain unanswered or only partially answered. These will provide a fertile area for additional research and analysis, and include:

- Further evidence gathering on the extent to which electoral competition and other mechanisms (e.g. risk of popular protest) compel politicians to make DRR a priority.

- Improved understanding of the nature of patronage politics, their effect on the overall priority attached to disaster risk reduction, and distortions in policy choices between different aspects of DRR.
- More comparative research between countries to better understand how political incentives are shaped by different types of disaster risk, as well as the location of risk within the country's political geography.
- Further investigation of the role of bottom-up, community participation in DRR programmes and policy processes.
- Additional investigation of the role of horizontal sources of pressure including intra-elite concerns, and the role of scientific bodies, the media and advocacy organizations in creating demand for improved DRR.
- Comparative case studies focused on particular episodes of reform in which countries have made significant progress in strengthening DRR systems. These studies should improve understanding of the most powerful drivers of change in different political and economic settings.

What are the implications of this analysis for DRR programming by external agencies?

The arguments put forward in this report indicate that effective DRR programming needs to be based on analysing the political economy of disaster reduction in a particular country and risk context. Therefore, it is recommended that the design of major disaster risk reduction programmes should include a **country level analysis** of the political economy of DRR. This should cover the main issues addressed in this report and, in particular, seek to identify the most important **domestic drivers of change** that are active or potentially active in the country context.

This analysis need not be particularly resource intensive. There are usually existing political economy and governance assessments available that can be used to understand the general political economy context. The specific issues relating to the political economy of DRR can be assessed using key informant interviews and secondary literature sources. A set of guiding questions could be developed to structure the analysis and help to identify the most important drivers of change.

Once the key drivers of change are identified, DRR programmers will be in a position to locate the most promising **entry points** for external assistance. These will vary greatly from country to country, but are likely to include a mix of following demand- and supply-side activities:

- grassroots initiatives to strengthen citizen DRR participation and community mobilization in related activities and policy processes;
- actions to support horizontal sources of demand for DRR, including working with advocacy groups, scientific bodies and the media;
- broader campaigns to promote information, transparency and voter awareness on DRR issues;

- international comparative studies, indicators and peer reviews to identify good practise, and to create international and key participant pressure for improved performance at the country level;^t
- studies on the economic and fiscal costs of disasters, as well as the costs and benefits of DRR that may prove persuasive in convincing political elites to give greater priority to DRR;
- institutional and capacity building of national and local DRR agencies to enable governments to respond adequately to domestic demand for improved disaster risk reduction performance;
- generating domestic political support through providing 'quick wins' including high-visibility programmes and infrastructure investments that may pave the way for a more comprehensive approach to supporting DRR;
- working selectively with local DRR 'champions', while recognizing the need for more systemic approaches.

Political economy analysis can also help DRR programmers to select the appropriate **financial instruments** to deliver assistance most effectively, as well as necessary accompanying managerial, monitoring and evaluation arrangements. These may include support for DRR as part of relief programmes, traditional development projects, local development funds, financial support for studies, competitive grant funds for civil society and scientific bodies, and contributions to disaster-risk insurance mechanisms.

In any political economy analysis, the key question is how the proposed instrument may affect domestic political incentives for DRR. A critical issue is to find ways to channel resources that support sources of domestic demand for DRR, and to design instruments so they promote national and local debate on DRR priorities. Funding instruments need to be specifically designed to enhance political DRR incentives. For example, the World Bank's Catastrophe Risk Deferred Drawdown Option (a source of fast disbursing liquidity support) requires borrowers to have a comprehensive DRR programme monitored by the World Bank. When appropriately designed, insurance instruments can also help strengthen incentives for prevention.

For example, the Caribbean Catastrophe Risk Insurance Facility (CCRIF) is paid out on the basis of weather events that meet established parameters, rather than on their actual damage. This creates an incentive for countries to invest in risk-mitigation measures as this will not reduce their entitlement to payments under the facility.

Political economy analysis also suggests that the **timing** of DRR programmes is critical to their success. If countries have experienced a recent major disaster political interest will be high and public opinion can be more easily influenced. Recent disasters can be used as a source of evidence and a rallying point to raise awareness of the consequences of past

^t There is scope for developing international indicators that can make these comparisons explicit. For example, the Spain-based international humanitarian assistance organization, DARA, is developing a Risk Reduction Index. The self-assessment process of the internationally accepted guideline to reduce vulnerabilities to natural hazards called the Hyogo Framework for Action is another promising initiative that should help to highlight good performance. A peer-reviewed assessment process linked to this exercise could also be considered in order to enhance lesson learning and the desire to perform better, thereby enhancing one's reputation.

failures and the lack of attention on prevention and mitigation. Therefore, one area to emphasize is strengthening the capacity and willingness of government or other DRR policy advocates to use their influence to take advantage of policy 'windows' that open up when major disasters occur.

There is a final implication of the political economy approach used in this report. It centres on the need for development agencies and international participants to be aware of the incentives that arise from their own politics and ways of working. This has not been explored in this report, but could be built into the analytical framework and explored in a separate review. A key concern is that the need of agencies for an international profile and media coverage may reinforce biases towards providing more visible DRR activities. There is also an ongoing discussion as to whether the current model of funding DRR programmes through disaster appeals reinforces a bias towards relief and rehabilitation at the expense of disaster prevention and mitigation. Finally, there is also an ongoing unresolved debate as to whether the availability of foreign assistance for disaster relief weakens incentives for disaster prevention.^{21,16}

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