



About this Guide

- Climate-related disasters are becoming more frequent and negatively impacting development progress across the world. Mainstreaming disaster risk management within the policies and programmes of different sectors ensures that the effects of disasters are minimised. At the same time, it enables governments to ensure that these policies and programmes do not put people at risk.
- This CDKN Guide demonstrates that effective mainstreaming requires a supportive policy environment, leadership, knowledge of the relevant risks, risk management techniques that are appropriate to each context, consistent financing and innovation. It draws on empirical examples and relevant literature to suggest how to achieve these elements and presents a clear way forward for governments seeking to mainstream disaster risk across different sectors.

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What does it take to mainstream disaster risk management in key sectors?

1. Introduction

Greenhouse gases that have already been emitted mean that the world will experience several decades of climate change, regardless of current efforts to reduce emissions. People are already experiencing the impacts of climate change through slow onset changes, for example sea level rise and greater variability in the seasonality of rainfall, and through extreme weather events, particularly extremes of heat, rainfall and coastal storm surges.¹ Actions towards development must be compatible with a changing climate. This requires each country to have a plan to avoid the losses and damages associated with extreme weather and to make disaster resilience central to economic and social policies.² This Guide draws on the experience of CDKN's programmes on climate-related disaster risk management (DRM) within the context of climate compatible development. It explores why mainstreaming DRM into development policy has had widely varying results between countries. In doing so, it attempts to delve beneath the surface of mainstreaming and identify the ways forward for integrating short- and long-term considerations for disaster risk reduction in important development sectors.

Defining DRM

UNISDR³ defines disaster risk management, or DRM, as “the systematic process of using administrative directives, organizations and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster”.

1.1 The rise of climate-related disaster losses

Disasters are increasing globally. The frequency and severity of weather- and climate-related hazards has changed, exposing more people and a greater value of assets to disasters. By some estimates, the occurrence of such disasters has more than tripled over the last 30 years. This contrasts with the frequency of disasters resulting from volcanic eruptions or earthquakes during the same period, which has not markedly increased.⁴ At the same time, economic damage from climate-related extreme events and disasters has increased dramatically in the last 50 years, with developing country economies being particularly badly hit.⁵ Figure 1 shows this rise in economic losses from disasters for the Asia and Pacific region.

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It is clear that climate change is happening and we are witnessing its impacts around the world. We are now more certain than ever – 95% certain⁶ – that human production of greenhouse gases has been the main cause of observed global warming and the resulting changes in the climate since the mid-20th century. By the end of this century, average global temperatures are likely to be 2.6–4.8°C higher than today if society does not cut emissions dramatically.⁷

Such a rise has striking implications for people and economies, especially in developing countries. For example, an increase of 2°C in the average global temperature would result in increased climate-related shocks and stresses, and losses of up to 6% of gross domestic product (GDP) in Asia's middle- and low-income countries (compared to average global losses of 1–2%).⁸ Disasters tend to have the greatest immediate and lasting impacts on the poorest people,⁹ and the long-term effects on health, education and employment opportunities are well documented.¹⁰ With a 'business as usual' approach, weather- and climate-related shocks and stresses will undermine the global goal to end poverty by 2030 and create difficulties for sectors including agriculture, water, sanitation, health, energy and industry.¹¹ These losses for livelihoods and economies will not all be in the future: employment and income losses are already happening in sectors ranging from agriculture to manufacturing.^{12,13}

1.2 The importance of mainstreaming DRM

While it is clear that climate- and disaster-related shocks and stresses undermine economic growth and development,¹⁴ there are many actions that governments and other agencies can take to reduce the risks to lives, livelihoods and economies.

Effective mainstreaming of DRM across different sectors is a vital dimension. The concept of mainstreaming risk has been interpreted in many different ways. The most all-encompassing definition argues that mainstreaming means "to consider and address risks emanating from natural hazards in medium-term strategic development frameworks, in legislation and institutional structures, in sectoral strategies and policies, in budgetary processes, in the design and implementation of individual projects and in monitoring and evaluating all of the above".¹⁵ In short, mainstreaming DRM means to understand and act on disaster risk as part of decision making processes across sectors and at all levels.

Mainstreaming is important because DRM is not a sector in itself, but a process to protect development progress, reduce losses and to support growth. By its nature, it cuts across sectors and governance spheres. Approaches to mainstreaming have received substantial conceptual attention,¹⁶ but significant gaps remain in how to put these into operation.¹⁷ As the next section highlights, gaps remain around the evaluation of disaster risks, devising risk-informed planning techniques and creating incentives to pursue these, and securing financing to mainstream DRM. Improving leadership, collaboration and innovation for mainstreaming processes also needs greater attention.

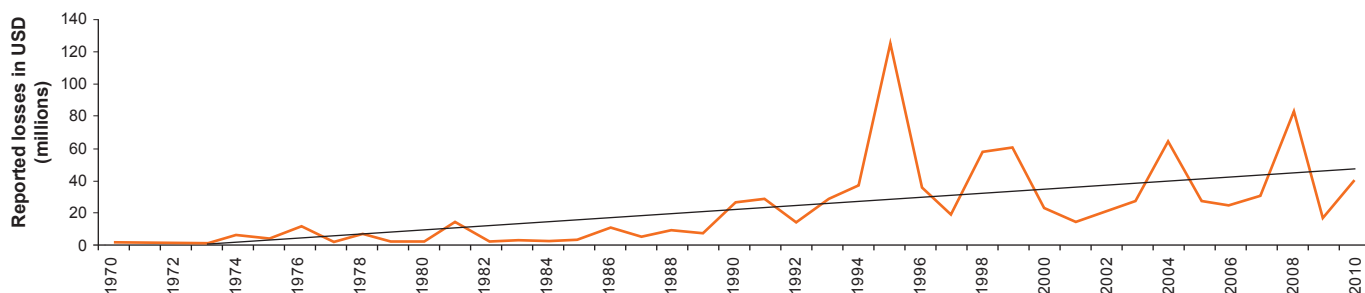


Figure 1: Economic losses due to all types of disasters in Asia and Pacific, 1970–2009

Source: UNESCAP/UNISDR (2012)¹⁸

While these gaps are acknowledged, global opinion is moving swiftly towards recognising the need for mainstreaming. A key example is the Hyogo Framework for Action (HFA), which binds its 168 signatory countries to “the integration of disaster risk reduction into sustainable development policies and planning”.¹⁹ The United Nations²⁰ also identifies mainstreaming risk in core sectors as a key priority. The impetus for mainstreaming DRM increasingly comes from the development community of practice. This is seen in the emerging consensus on the need to include resilience to shocks and stresses in the framework that will succeed the Millennium Development Goals in 2015.²¹ While it is unlikely that there will be a separate goal on resilience, it is almost certain that targets and indicators on resilience will be included in other goals.²² Governments around the world need to acknowledge this discourse and take decisive action to mainstream risk in their own plans, processes and investments across key sectors, in order to deliver resilient, sustainable growth and development in an age of increasing climate change and uncertainty.

1.3 Structure of this Guide

CDKN has funded many research, technical assistance and knowledge management projects over the past few years. These have provided a number of lessons about the challenges and opportunities involved in mainstreaming climate-related DRM as part of climate-compatible development planning. This Guide presents the five central challenges around mainstreaming DRM into sectoral policies and programmes, and analyses the opportunities to overcome these.

The agenda of a CDKN ‘Disaster risk management learning and innovation hub’, facilitated by Future Considerations and held in Bangkok, Thailand, in 2013, was designed to identify and analyse the drivers and challenges of mainstreaming DRM among many of our partners in Asia. From this foundation, we draw on literature, insights from climate and development experts who participated in the hub, and a range of case studies from projects funded by CDKN. The case studies outlined here give a flavour of CDKN’s experience in this area.²³

Section 2 provides the rationale for mainstreaming, defining the concept and reviewing the main challenges. Following this, Sections 3–7 propose different ways to achieve effective mainstreaming, drawing on CDKN studies and the wider literature. The final section summarises these lessons and presents the main points of action for governments to enhance mainstreaming in important economic sectors.

2. Understanding mainstreaming: impetus, framings and challenges

Mainstreaming DRM not only enhances a country’s ability to manage risks and limit the impacts of disasters, but also helps to ensure that any new development is not ‘maladaptive’ – in other words, ensuring it does not put people at greater risk to these hazards.²⁴

Poor people suffer the most from disasters, as they lack the capacity and resources to effectively cope. Including risk management in policies and programmes to reduce poverty is vital for helping to ensure that the most vulnerable people can access the benefits of development.²⁵ Some people see mainstreaming as a way to realise certain human rights, including the right to safety.²⁶ The impetus for mainstreaming risk in development can also be linked to a government’s fiduciary responsibility; Jackson makes this point when he notes that mainstreaming risk is a government’s “duty to their citizens to maximise the utility of the public resources disposable to them, similar to a private company’s fiduciary duty to maximise value to shareholders”.²⁷

Mainstreaming can take place at all levels of governance, from development plans, processes and initiatives at the local level (e.g. city master plans or individual infrastructure projects) through to subnational plans (e.g. State Development Plans in India) all the way to national plans (e.g. five-year plans). Risk management principles can also be mainstreamed within decision-making processes, legislation, regulations, organisational protocols and subsidy regimes. Regardless of the level of governance or

avenue, mainstreaming largely takes place within the core sectors that governments around the world use for most development activities. These include agriculture, transport, housing, health and education etc.

Creating a clear ‘vision’ of mainstreaming has proved to be difficult for governments and other agencies around the world. There are five main reasons for this. First, mainstreaming requires all forms of sectoral planning to have a clear consideration of risk.²⁸ But there are obstacles to this, such as DRM being seen as ‘outside’ of sectoral development, having low priority in core sectors, and the lack of appropriate national legislation.²⁹ The second reason is that current and future risks are evaluated through separate processes, when they should be combined, and there is often a basic lack of technical capacity for understanding, evaluating and acting on risk information.³⁰ The third reason combines the compartmentalisation of funding streams for DRM and climate change and development, inadequate interest from the private sector, and the paucity of estimates for the cost of mainstreaming. These all make it difficult to obtain financing for mainstreaming.³¹ Fourth, innovative solutions are needed to ensure that sectors no longer operate without a clear acknowledgement of risk and its impact on development. This requires strong leadership and political acumen.³² Finally, mainstreaming risk in core sectors is a complex process that needs careful steering by a champion or leader. This can be hampered by capacity constraints of sectoral staff, weak institutional mandates for mainstreaming, and political pitfalls.³³

However, there are ways to address these challenges. The following sections will unpack these and present solutions for mainstreaming DRM.

3. Create the right policy environment for mainstreaming DRM

For development to be considered as climate compatible, it needs to minimise greenhouse gas emissions and be resilient to the impacts of a changing climate, while also recognising the growth opportunities that a global response to climate change offers.³⁴ In this context, DRM is recognised as a vital part of climate compatible development, as it aims to reduce the current deficit in adaptation efforts and responds to the urgent political needs emerging from disasters associated with extreme weather.³⁵ Consequently, planning for climate compatible development considers short- and long-term climate-related disaster risks. This minimises the impact of disasters on people’s lives and national economies, both now and in the future.

A large body of research clearly indicates the benefits of risk-informed planning, and the lower cost of investments to reduce disaster risk and adapt to climate change compared to the cost of rebuilding after disasters.³⁷ The tremendous human and financial losses suffered in Pakistan as a result of the 2010 floods are one example. The floods caused billions of dollars of damage, worth a significant proportion of GDP, and affected approximately 20 million

Challenges	Ways forward
Disaster risk management, climate change planning and sectoral development are all compartmentalised into separate sectors. For example, in India they are managed by the National Disaster Management Authority, the Ministry of Agriculture and other line ministries.	<ul style="list-style-type: none"> ● Encourage small-scale, strategic coordination between ministries. ● Position climate-related disaster risk reduction as a development opportunity; for example, programmes to promote investment through risk reduction in Cartagena (see Box 1).
Climate-related DRM is given low priority in sectoral and line ministries.	<ul style="list-style-type: none"> ● Provide robust, accessible and timely information on the economic returns offered by risk-informed decisions.
There is a lack of appropriate national and subnational policy for DRM.	<ul style="list-style-type: none"> ● Exploit opportunities to influence public opinion or support civil society activism on DRM. One example is Ahmedabad, India, where a heatwave spurred local residents into action against climate change (see Box 3).

Box 1. Turning climate risk into an opportunity in Cartagena

Cartagena is an iconic World Heritage city in Colombia. It is a magnet for tourists and also has significant potential as an industrial and commercial hub. Cartagena is also one of the cities most vulnerable to climate change on Colombia’s coastline. To tackle this risk and create development opportunities, the Ministry of Environment and CDKN partnered with the City of Cartagena, the municipal Chamber of Commerce, and other academic and government stakeholders in a project to mainstream climate-related DRM into sectoral and territorial planning.

A risk assessment was undertaken to evaluate the city’s vulnerability and exposure to climate change and disaster risk. This formed the basis for Cartagena’s ‘Guidelines for Adaptation to Climate Change’, which will inform Cartagena’s upcoming ‘Adaptation Plan’. Together, these documents are the foundations for mainstreaming action on long-term climate risk into other municipal planning processes. For example, Cartagena’s ‘Development Plan for 2013–2015’ includes climate change as a cross-cutting issue and has a specifically assigned budget for climate action. The Government of Colombia is closely watching this municipal process which, it is hoped, will influence the development and implementation of the ‘National Adaptation Plan’.

The project tackles climate risks by considering climate change adaptation and development in tandem. Flooding and sea level rise are being tackled as long-term and increasing threats to which Cartagena can adapt, and the ‘Adaptation Plan’ is a way to promote transformational investments in infrastructure and support sustainable growth and competitiveness in important economic sectors such as tourism. This approach has been successful, helping decision-makers to address the political challenges of mainstreaming long-term DRM and climate change adaptation. The risk assessment was understood from the outset as a political process, not just a scientific one, which was important.³⁶

people. These losses were caused in part by widespread deforestation, inappropriately built infrastructure, and other 'risk-blind' decisions.³⁸ Risk-informed planning and development policies that consider the risk of shocks and stresses would have saved many lives, livelihoods and reduced the economic impact of the floods.

3.1 The need to understand disaster risks and climate change impacts

Most governments find it difficult to plan and invest with disaster risk in mind. They have limited understanding of the impacts of disasters and climate change on development progress, and of the benefits of proactive DRM. It is often difficult for decision-makers to relate disaster risk, and especially longer term climate change impacts, to more immediate development dynamics. As a result, DRM tends to be associated with disaster events rather than the underlying development mechanisms which create disaster risk.³⁹

Even when the risks are known, governments often see DRM and climate change adaptation as a cost rather than a necessary investment for saving lives and livelihoods, reducing threats to critical infrastructure, and achieving sustainable development. They often fail to adequately gauge the opportunity costs of investing in DRM compared to other concerns such as health, education and the military. The factors driving such perceptions vary from country to country, but there are many shared challenges to mainstreaming disaster risk into planning.

One common challenge is that DRM, climate change planning and sectoral development are compartmentalised as separate streams in national policy-making systems. It is common to see climate change planning assigned to the Ministry of Environment and decision-making on DRM is assigned to the National Disaster Management Authority, while sectoral policy remains the mandate of a diverse set of thematic ministries (agriculture, health etc).

An example of this compartmentalisation is found in India. DRM is entrusted to a National Disaster Management Authority through the Ministry of Home Affairs. Responsibility for climate change policy-making, negotiations and coordination rests with the Climate Change Division of the Ministry of Environment and Forests. This separation is often reflected in the competing or even conflicting priorities of the agencies involved. This is a challenge for planning integrated climate compatible development and limits the pooling of the combined expertise and objectives of all three groups. This separation has resulted in distinct climate change and DRM policies and action plans at national and state levels, leading to difficulties in addressing disaster and climate change risks in a coordinated manner.

As long as DRM and climate change adaptation remain in separate policy domains, achieving systematic, risk-informed sectoral development planning will remain elusive; disaster risk cannot be comprehensively

tackled by DRM authorities alone. The challenge lies in establishing a structure of shared responsibility and decision-making on these issues, one that allows for sustained and effective coordination and consensus building between ministries and other stakeholders. As discussed later in this Guide, compartmentalisation also has a bearing on how easy it is to evaluate risk and secure finance for mainstreaming.

3.2 Moving climate-related DRM up the political agenda

Another challenge for mainstreaming DRM and climate change adaptation is that they are often low on the list of priorities for governments and sectoral and line ministries, who often have to juggle multiple development demands with very limited resources.⁴⁰ One reason for this is the disconnect between the short terms of elected governments and elected political or institutional stakeholders. Short political cycles mean decision-makers favour investments with immediate results, rather than pursuing long-term solutions to address problems with decadal timescales such as climate change adaptation and DRM.⁴¹ For risk-informed decision-making to gather political attention there is a need to provide convincing evidence of the costs of such short-term decisions in different sectors over the short, medium and long term. However, this evidence is often not available or is poorly communicated.

Another challenge is a lack of appropriate national legislation to obligate sectoral decision-makers to make plans that consider disaster risks. Domestic legislation is an important tool for institutionalising desirable behaviour across different ministries. Legislative changes around DRM have started to emerge in developing countries but these generally remain oriented towards disaster responses rather than risk reduction. Suitable legislation for climate-related DRM, tackling both current disaster risks and longer-term climate change risks, is critical to create incentives for more sectors to consider risk management. For example, legislation is needed for building standards, infrastructure planning, land-use regulation and food production, among many other issues.

Legislation is also useful in changing the behaviour and investment decisions of the private sector. This can cause objections, however. There are many documented cases of vested interests trying to derail reform processes. The ability of vested interests to be an obstacle to risk-informed planning can be seen in infrastructure projects in India's eastern Himalayas (see Box 6).

To be effective, legislation for climate-related DRM must be complemented with appropriate monitoring systems and enabling strategies at the planning, execution and evaluation stages. But monitoring mechanisms in developing countries are often ad hoc, inconsistent and lacking in transparency, or non-existent. This presents a challenge to policy-makers seeking to institutionalise risk-informed planning through national legislation. Accountability mechanisms to measure progress – or lack thereof – will be included in the post-2015 international DRM framework, the second Hyogo Framework for Action (known as HFA2). This may help to support monitoring from the top down.⁴²

3.3 Addressing the challenges

Despite these significant challenges, creating a policy environment for risk-informed decision-making is achievable. Research and the experience of CDKN and others have provided insights into ways to overcome some of these challenges. For example, there are good opportunities to address the problem of compartmentalisation at the national level through targeted, small-scale and strategic coordination between ministries. Experience from Latin America and the Caribbean suggests that coordination and information sharing are more effective when they involve a small number of sectors with common goals and aims, and with a history of collaboration.⁴³ Promoting climate-related DRM as a development opportunity can help to provide a policy incentive for risk-informed planning, as seen in Cartagena (see Box 1).

Accessible, accurate and timely information on the economic returns offered by risk-informed decisions and risk-reducing investments can be a strong policy incentive. This is especially true if investments are likely to deliver short-term economic benefits as well as long-term ones. For example, in Da Nang, Vietnam, the experience of Typhoon Nari in 2013 demonstrated the economic benefits of climate-adapted housing investments. This has driven policy changes in favour of risk-informed decision-making in the city's housing sector (see Box 2).

Major disaster events provide windows of opportunity to mobilise action on DRM. They draw significant public and political attention that can change perspectives and behaviours, and also catalyse institutional change.⁴⁴ This was seen in Ahmedabad, India, where a deadly heatwave in 2010, combined with the presentation of data confirming the mortality and health impacts, spurred the local government to take action against these recurrent and creeping disaster events. The success and publicity of the 'Ahmedabad Heat Action Plan' have created political momentum for tackling heat risk in other cities and at the state level in India. This provides another, more positive, window of opportunity (see Box 3).

Decentralising DRM from central government to local authorities is a critical element of good governance and a way to address some of the challenges outlined above. But decentralisation alone is not enough: the advantages are often undermined by local capacity constraints, financing difficulties, challenges with cross-government coordination and low levels of citizen participation in risk-management activities.⁴⁵ Experience has shown that in order for decentralisation to be effective as a means for risk-informed planning, other supporting aspects are needed. These include: strong national leadership on DRM and mechanisms to enforce DRM policies; high levels of public awareness about risks and risk reduction; adequate technical capacity to undertake risk-reduction actions; and incentives that create strong political interest in risk-informed planning.⁴⁶

Box 2. Sheltering from a gathering storm

The provision of shelter following disasters is one of the largest recurring costs for governments and relief organisations across the world. Many types of existing shelter fail to protect people from hazards. This is a significant risk, but there is very little data is available on the economic return and costs and benefits of investing in climate-adapted, disaster-resilient homes that would reduce the need for such shelters.

ISET International (the Institute for Social and Environmental Transition), in partnership with Hue University in Vietnam, Gorakhpur Environmental Action Group in India, and ISET Pakistan, are seeking to fill this knowledge gap through research funded by CDKN. Case studies in the coastal Vietnamese city of Da Nang, Gorakhpur in India and in three locations in Pakistan will use cost-benefit analysis to examine the economic returns of investments in climate-adapted housing designs in cities prone to tropical storms, flooding and waterlogging, and extreme heat. Economic returns will be assessed over three time horizons: the present, 30 years, and 100 years.

The two-year project, which began in April 2012, included a competition to design climate risk-informed buildings, involving local architecture schools and professional firms. They developed climate-adapted housing designs that were technically effective, culturally appropriate and could be built with local capacity (in terms of expertise, available materials etc). The best buildings were then subjected to cost-benefit analysis.

In Da Nang, Vietnam, the community was involved in the competition and took part in voting for winning designs. This helped to create awareness of the possibility to build homes which could withstand recurrent storms at little additional cost. Already, 244 climate-adapted houses have been built. Of these, 20 were built with financial support from the city's government. The remainder were built with financial support from the Asian Cities Climate Change Resilience network (ACCCRN). Their microcredit programme provided 30% of the cost, with the rest invested by households.

The structures withstood Typhoon Nari, which hit during the course of the project, and minimised human and economic losses compared with other homes. The Da Nang city government has since introduced a policy that means all housing programmes in the city should apply resilience principles.⁴⁷

The full results of the cost-benefit analysis research will be published in 2014, but the experience in Da Nang illustrates how demonstrating short-term cost savings can change policy in favour of longer-term investments and risk-informed planning.⁴⁸

3.4 Political incentives for disaster preparedness

There is another incentive for governments and local authorities to address the challenges around mainstreaming DRM and create a policy environment that better prepares for disaster risks. Disasters can have political costs that affect how actions to reduce disaster risk are perceived.⁴⁹ In some cases, disasters can damage political reputations and cause protests against the leaders deemed responsible

Box 3. Addressing extreme heat risks in Ahmedabad

In the rapidly growing city of Ahmedabad, India, heatwaves were not considered to be significant hazards compared to monsoons and earthquakes. But heatwaves have become longer and more intense in Ahmedabad in recent years, and in May 2010, a deadly heatwave caused a spike in heat-related illnesses and mortality. This was a wake-up call for the local government.

A coalition of academic, health and environmental groups partnered with the Ahmedabad Municipal Corporation to address the health risks of heatwaves. Through an action-research project led by the Natural Resources Defence Council, in partnership with the Indian Institute of Public Health-Gandhinagar and the Public Health Foundation of India among others, local officials began to understand the heat threat in the city. This included understanding the damage caused by intense heat waves to the population's health, the impact of climate change on that heat threat, and the groups within the city most vulnerable to extreme heat. Through this research, they developed recommendations for possible responses.

To act upon these recommendations, the partners helped the Ahmedabad Municipal Corporation write Ahmedabad's 'Heat Action Plan',⁵⁰ which was launched in April 2013 at the beginning of the heat season by the Corporation's Commissioner and the city's mayor. The Action Plan sets out actions to prepare for heatwaves and an early warning system for extreme heat, including steps to improve interagency coordination and communication across relevant sectors. It is now being implemented, beginning with interventions that offer the best value for money and benefit the most vulnerable groups.

With this Action Plan, Ahmedabad is a pioneer for tackling extreme heat impacts in South Asia. The project demonstrates how action-oriented and trusted research, coupled with local government leadership and a sense of responsibility, can mainstream DRM at the city level. The city's success has raised the profile of extreme heat as a serious hazard in India, but also of the actions that can be taken in response. This has coincided with pressure from individual states and the National Disaster Management Authority to officially recognise heat as a disaster threat, leading to interest from other Indian cities and states in replicating and scaling up these efforts.⁵¹

for the resulting losses and hardship. A failure to address disaster risks that can be forecast, such as storms, and disasters with intense and highly visible impacts, can have especially high political costs.

Protests at times of disaster can be especially powerful and lead to changes in leadership, as communities are forced to organise and assist themselves and the limited presence and power of government is revealed. As a result, officials ushered into office in such circumstances may assign greater priority to DRM. After the September 1985 earthquake in Mexico City, the government's limited rescue and relief effort led to the creation of a large self-help movement. This grew into political protests, with more

than 40,000 people marching on the presidential palace.⁵² 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 ignore statutory building codes.⁵³

Even without the jolt of a disaster, pressure exerted on government agencies – by citizens, academic institutions, scientific bodies, the media, elite groups and advocacy organisations – can push DRM up the political agenda. Such pressure is especially effective when these groups form coalitions.

4. Understand and evaluate disaster risks

Challenges	Ways forward
Current and future risks are identified and evaluated through separate processes.	<ul style="list-style-type: none"> Develop national or local technical bodies responsible for producing risk assessments. Use appropriate available tools and protocols, such as CCORAL (See Box 4).
There is a lack of capacity for understanding, evaluating and acting on risk information.	<ul style="list-style-type: none"> Donors should approach risk assessment as a long-term process rather than an activity to support discrete projects, with training and institutional capacity building elements. There should be greater engagement with the intended beneficiaries and end users in the conception and design of risk assessments.

Alongside political will, understanding and evaluating disaster risk is an important step in the development of robust, risk-informed, climate compatible development policies. Risk assessment allows decision-makers to understand the potential negative impacts of disasters on societies and economies, by identifying and analysing the threats from hazards and the vulnerability of the people and assets exposed.⁵⁴ Climate and disaster risk assessments specifically consider vulnerability and exposure in terms of existing climate-related disaster risks and future risks in the context of climate change.

Risk assessments are usually produced by a technical or scientific agency for use in decision-making by governments or other big investors. They can be tailored to a range of purposes, budgets and users, including communities, national and subnational governments, and the private sector. But for various reasons, such as financial and technical drawbacks, risks that have been assessed are not always taken into account as part of policy-making processes. This is a problem; as explained in Section 1, without knowledge and due consideration of disaster risk in decision-making, any development gains resulting from a policy or programme can easily be lost or undermined in the event of a disaster. Furthermore, such decisions can increase disaster risk.

4.1 Challenges to understanding and evaluating disaster risk

While there is growing recognition of the need to understand, evaluate and act on disaster risk in decision-making processes, there are challenges to achieving this in practice. These can be technical, political, or a combination of both.

A robust and comprehensive climate-related disaster risk assessment should not only consider current disaster risk, but also the likely impacts of climate change on disaster risk in the future.⁵⁵ However, too often current and future disaster risks are identified and evaluated through separate processes.⁵⁶ In the national context this can be a symptom of the compartmentalisation of responsibility for action on disaster risk and action on climate change within a national government outlined in Section 3. As a result, the assessment of sectoral disaster risk and climate change risk are often two separate exercises. While disaster risk is assessed by disaster management authorities, climate change risk is often evaluated by environmental ministries and departments, or other agencies associated with climate change research and policy.⁵⁷ It is rare that the agency carrying out disaster risk assessment incorporates elements of long-term climate risk, or for climate risk assessors to build on existing disaster profiles. As a result, neither party sees the complete picture and the outcomes of their assessments are treated separately in development planning by policy-makers. This leads to disjointed and piecemeal implementation. Sectoral decision-making processes may even ignore risk assessments completely.

National governments are only one of many agencies seeking to understand and evaluate risks to inform decision-making. Such challenges are played out around the world at multiple scales. DRM, climate change adaptation and development practitioner communities approach the evaluation of disaster risk with different objectives and with different understandings of key concepts such as hazard and risk.⁵⁸ Because of the broad range of actors conducting climate and disaster risk assessments, the conceptual frameworks and methodologies underpinning such risk assessments differ, even when undertaken by agencies within the same practitioner community. This often results in incomparable or even conflicting results and policy recommendations, and is a significant obstacle to the widespread quantification of climate and disaster risk information.⁵⁹ Limited platforms for sharing information and the lack of inter-agency coordination make multi-sectoral approaches difficult.

A lack of capacity for understanding, evaluating and acting upon disaster risk information is another obstacle for risk-informed decision-making. Government agencies, especially at subnational or local level, often lack the capacity to produce risk assessments or interpret technical risk assessment results into policy decisions and legal instruments.⁶⁰ Organisations such as the United Nations Development Programme, the United Kingdom's Department for International Development, the Asian Development Bank and the World Bank have supported many countries to assess their risks, usually as part of specific projects. But less progress has been made in training personnel to

address this capacity gap within countries. The capacity to produce risk assessments is further hampered by a lack of accessible, high quality and relevant spatial risk data. This is especially true at local levels: risk data translated from the nation to subnational level are rarely useful for local-level decision-makers.⁶¹ Countries should give greater consideration to the scale at which action needs to be taken when conceptualising how to organise their disaster risk assessments.

Equally, the lack of procedures for explaining technical results in simple language is a problem for decision-makers wishing to understand and to act on risk information. The results of climate and disaster risk assessments are often presented in technical language or in formats that are difficult to interpret and use.⁶² People producing risk assessments need to be more aware of the need to present results in a manner that allows information to be easily understood and integrated into decision-making processes. Failure to do this will limit the policy impact of information about risks.

4.2 Opportunities for risk assessments

Despite these challenges, opportunities abound for using risk assessments. These lie with risk assessment producers, decision-makers and third parties. Donors and development agencies are important in promoting risk assessments and can play a role in overcoming challenges by better understanding the needs and capacities of the government partners they are looking to support. For example, they should approach risk assessment as part of a longer-term process, rather than an activity to support a discrete project. This requires them to complement the technical component of risk assessments with training, institutional capacity building and any necessary policy adjustments.⁶³ Within this, the development of national or local technical bodies responsible for producing risk assessments will help to make the process sustainable and institutionalise risk-informed decision-making. This in turn will result in the long-term, everyday use of these tools. Similarly, with better consideration of capacity and data limitations, donors could promote simpler and less data-intensive methods for risk assessment, which could produce useful information.⁶⁴

There are further ways in which the agencies producing risk assessments can support the understanding and evaluation of disaster risk in decision-making. Significantly increasing the engagement of intended end users in the conception and design phase of risk assessments goes a long way towards overcoming the challenges outlined above. This helps to ensure alignment between how organisations producing risk assessments perceive useful information, as well as the needs of the decision-makers expected to use that information. Other areas that could be improved include the format and language of results, and the priority issues and types of recommendations needed.

Presenting accurate and accessible information on climate and disaster risks to decision-makers, if done by risk assessment producers who understand their needs, can and does catalyse action. This can be seen in the case studies on Ahmedabad's Heat Action Plan (Box 3) and Gorakhpur's climate-resilient district disaster management

plans (Box 7). Knowledge managers also have a role to play in helping to make existing information navigable and accessible. Initiatives such as Caribbean Climate Online Risk and Adaptation (CCORAL) tool (see Box 4) help decision-makers to make sense of the information already available and use it effectively.

Partnerships across different layers of government, from the national level through to the local level, present an opportunity to support the reliable evaluation of risk in a practical and sustainable way. This can help to evaluate risk at local levels, working within the constraints of weak institutional and technical capacities that are common at this level.⁶⁵ As discussed, decentralised responsibility and action on DRM often falls down in practice as a result of capacity constraints and other obstacles.⁶⁶ These vertical partnerships allow higher levels of government, which have greater capacity, to support local governments in understanding and evaluating risks, and at relatively low cost.

Box 4. The Caribbean Climate Online Risk and Adaptation tool

The Caribbean Community Climate Change Centre coordinates the response to climate change in the Caribbean Community (CARICOM) countries.⁶⁷ CARICOM member states adopted the ‘Caribbean Regional Framework for Climate Resilience’ in 2009 and the subsequent ‘Implementation Plan’ in 2012. These have emphasised the need for a more coordinated and strategic approach to risk-informed decision-making on climate risk and climate change across Caribbean nations and among other stakeholders.

To support the Implementation Plan, a Caribbean-specific online management tool was needed to provide access to the host of research, risk assessment and policy documents on climate risk and climate change in the Caribbean. And so the Caribbean Climate Online Risk and Adaptation (CCORAL) tool was born.⁶⁸ CCORAL is an online risk-based decision-support tool designed to provide up to date science and social science information on climate risk in an accessible and navigable way. It includes a screening process to help users identify what risk information they need. Interest from users in the region was strong from the start, with over 100 uses within the first week.

CCORAL was developed by the organisation Acclimatise and launched to wide acclaim by CARICOM member states in Saint Lucia in 2013. For example, IPCC Chairman Dr Rajendra Pachauri praised it as an “extremely important asset in assessing risk from the impacts of climate change in the Caribbean region”. The Caribbean Development Bank is considering using the tool to support investment decisions, which will be significant in achieving wider development benefits in the region. It is hoped that CCORAL will, in time, provide the foundation for better risk-informed decision-making by other institutions. These include the Jamaican Minister for Water, Land, Environment and Climate Change; a spokesperson told the Jamaican Parliament that it would be used to assess the suitability of community and national investments in light of climate change.

Finally, undertaking risk assessments is an opportunity to strengthen cross-sectoral work and mainstream DRM in climate compatible development. The tools used to conduct climate and disaster risk assessments can provide a platform for improved collaboration between institutions or sectors that traditionally struggle to work together.⁶⁹ An assessment tool being currently developed by ODI for Australian Governmental Department of Foreign Affairs and Trade will allow people with no prior experience of engaging with climate change issues to consider the effect of these on sectors including education, health and agriculture.

5. Obtain consistent and effective financing

Challenges	Ways forward
DRM, climate change and development financing are segregated.	<ul style="list-style-type: none"> Draw on scientific data on the links between climate change and disaster risk to support arguments for using climate funds to mainstreaming DRM.
There is a shortage of financial estimates and needs assessments for mainstreaming DRM.	<ul style="list-style-type: none"> Use and build on existing mechanisms for estimating the financial needs of mainstreaming and analysing the costs and benefits (see Box 2).
It is difficult to secure finances from the private sector.	<ul style="list-style-type: none"> Conduct more research into harnessing business opportunities from risk management (see Box 5). Scrutinise existing examples of private sector financing to identify replicable practices.

Countries need to secure and sustain substantial financial resources to overcome the impacts of natural disasters and reduce future risks from climate change. The United Nations Framework Convention on Climate Change estimates that US\$60–100 billion per year will be needed, in new and additional finance to developing countries, to meet global climate change adaptation requirements by 2030.⁷⁰ Despite the rhetoric, donor and government investment in DRM remains low. Most disaster aid is diverted towards relief and reconstruction efforts. A recent study found that in 40 of the world’s poorest and most disaster affected countries, just 1% (US\$3.7 billion) of total official development assistance was spent on DRM.⁷¹

There are a number of difficulties associated with securing adequate financing for DRM. The segregation of DRM, climate change and development financing is one challenge – another face of the compartmentalisation problem outlined previously. Financing for DRM and climate change is segregated into separate streams of donor support and government allocation. This restrains the integration of these two objectives in policy planning. The Green Climate Fund, which aims to support climate-resilient development and is set to be launched in 2014, is considered vital for the success of the next United Nations climate talks. Its target – to attract US\$100 billion a year by 2020 – is one ray of hope for this funding situation.⁷²

The shortage of financial estimates and needs assessments for mainstreaming is another major stumbling block. To prioritise climate-smart investment, governments need to understand the economic costs of shocks and stresses and the financial benefits of timely adaptation and risk reduction actions. As discussed, comprehensive cost–benefit analyses of climate-related DRM in key development areas and sectors are still not common, especially in developing countries. Without this evidence, it is difficult to make a convincing case for increased financing and investment to government departments and donors. Influencing the planning and allocation of budgetary resources is hampered for the same reason. This is the rationale for the CDKN-supported ‘Sheltering from a Gathering Storm’ initiative that aims to provide insights into the economic returns from investment in climate-adapted and disaster-resilient building design (see Box 2).

5.1 The role of the private sector

There is considerable potential within the private sector for supporting DRM, but harnessing this is another well-documented challenge. Achieving disaster-resilient and climate compatible development needs support from the private sector, as the policies that govern markets, industries and economic growth need to be resilient to shocks and stresses. As a result, there is some urgency in governments looking to partner with the private sector in order to rapidly develop and deliver DRM and adaptation solutions.⁷³ As stated by UN Secretary-General Ban Ki-moon, “governments bear the responsibility for disaster risk reduction. But the level of risk is also related to the where and the how of investment by the private sector, which is responsible for 70 to 85% of worldwide investment in new buildings, industry and critical infrastructure”.⁷⁴

How this investment is made has far-reaching consequences for the accumulation of disaster risks and on underlying risk drivers.⁷⁵ However, only half the countries assessing progress against the Hyogo Framework for Action have reported on active engagement with businesses on DRM.⁷⁶ Several barriers hinder private sector engagement in DRM and adaptation activities, but two stand out. First, building resilience requires high upfront investment costs and long-term planning, which often compete with short-term business needs. Second, it is difficult to mobilise investments for disaster and climate resilience.⁷⁷

5.2 How to provide financing

While obtaining consistent and sufficient financing is clearly difficult, there are opportunities and methods to do this. One way is to pool the finance for adaptation and climate-resilient development with DRM, where these overlap, and further align these with appropriate sources of sectoral development funding.

Using scientific data on the links between climate change and disasters, as well as the fact that adaptation can help reduce disaster risk, should support arguments for using climate funds, such as those from the Green Climate Fund, for mainstreaming DRM.⁷⁸ A recent study by the Overseas Development Institute (ODI)⁷⁹ has

identified increasing levels of funding for DRM activities from climate adaptation financing sources, such as the Adaptation Fund, the Least Developed Countries Fund and the Pilot Program for Climate Resilience. Also, countries including Indonesia have committed 30% of climate finance to DRM.⁸⁰ Overall, 42 countries received support for targeted DRM activities from adaptation funds between 2008 and 2012.⁸¹

Another way to make progress on solving problems in estimating the finances needed for mainstreaming, as well as cost–benefit analyses, is to analyse and expand the burgeoning methodologies for this. There is increasing evidence of how the benefits of building resilience and undertaking appropriate DRM can attract investment. An ODI report makes an ‘economic case’ for mainstreaming disasters, environmental issues and climate risks into core development sectors and presents empirical economic evidence for supporting integration.⁸² Another study uses an econometric model to measure the cost-effectiveness of building resilience before disasters happen, as opposed to responding to shocks through humanitarian action afterwards, and finds evidence in favour of building resilience.⁸³ The CDKN-supported research in India, Pakistan and Vietnam, described in Box 2, will also help pave the way for the wider uptake of methods to make an economic case for mainstreaming. Research evidence is starting to proliferate and contains methodologies that can be adapted and employed to supply hard data in support of the case for securing finances for mainstreaming.

Regarding financing from the private sector, there is increasing evidence that demonstrates why businesses and households should ‘climate-proof’ their assets and revenues. Many businesses and households are making such investments already (although more research is needed to understand the scale and nature of these investments). It is also clear that the private sector’s role is not restricted to just climate-proofing business investments: there are also emerging business opportunities to manage and reduce the climate risks for others.

For the government to attract more private partners, business opportunities need to be better understood and evolved into new products and markets. For example, having seen a large market for disaster risk insurance, a number of insurance providers are offering innovative products in partnership with civil society organisations and governments. In one case, a consortium of partners, supported by CDKN, are providing technical assistance to the Government of Pakistan to develop disaster risk insurance products for vulnerable communities. This support includes the preparation of an insurance fund and an insurance strategy (see Box 5).

Governments also need to be more proactive in conducting pilot projects and research programmes that expand the role of private sector funding in risk management, either through insurance, microcredit schemes or advance market commitments that help justify the high upfront investment costs for risk management technologies in particular sectors.⁸⁴

Box 5. Disaster risk insurance for vulnerable communities in Pakistan

CDKN and a consortium of partners are providing technical assistance to the Government of Pakistan, including the National Disaster Management Authority, to help develop disaster risk insurance for communities vulnerable to natural disasters.

Several lessons for mainstreaming DRM into development planning have emerged from the project:

- Offering new disaster insurance products to disaster-prone communities requires a full assessment of the level of risk they face, against a range of threats. These risks have to be quantified before new products can be spread through established insurance markets and banking systems.
- It is important to move from ex-post risk financing arrangements (e.g. reparations) to ex-ante (e.g. savings, insurance). This will require innovations in traditional risk management arrangements.
- Insurance cover may not reduce the immediate impacts of a disaster, but will ensure timely finance that may contribute to faster recovery, reducing the long-term impact of a disaster.
- The project underscored the importance of engaging all the necessary stakeholders in deep and meaningful consultations from the very beginning of a process.⁸⁵

6. Innovations for mainstreaming

Challenges	Ways forward
There are several potential political barriers to mainstreaming (see Box 6).	<ul style="list-style-type: none"> • Use participatory and inclusive processes to help navigate the potential political pitfalls. For example, CDKN's case studies from Pakistan (Box 5) and India (Box 3) demonstrate the importance of involving a wide variety of stakeholders.
It can be hard to secure and sustain leadership.	<ul style="list-style-type: none"> • Establish incentives (e.g. promotions) to encourage leadership for innovation.
It can also be difficult to obtain finances for innovation (see, for example, the case of finance-enabled mainstreaming in a roads project in Vanuatu, see Section 6.2).	<ul style="list-style-type: none"> • Align sources of funding, refine methodologies for the cost-benefit analysis of mainstreaming, and create an enabling environment for securing finance from the private sector.

It is clear that innovation is critical to meeting the challenge of climate change, for managing risks through new processes such as adaptive management, for the participation of a larger diversity of voices in decision-making, and for more inclusive governance mechanisms that support effective risk reduction.⁸⁶ The IPCC report on managing the risks of extreme events and disasters⁸⁷ underlines the importance of such innovation. It also highlights the need to question

assumptions about and paradigms for sustainable development, and to stimulate innovation to encourage new patterns of response. The need for innovation to support mainstreaming is also reflected in the mid-term review of the Hyogo Framework Agreement, which outlined the value of new and innovative forms of public-private partnerships to strengthen resilience in political, economic, financial and research fields.⁸⁸

6.1 Challenges for innovation

There is a growing understanding of the many challenges that this innovation entails. Firstly, undertaking innovation is mired in issues of political economy.⁸⁹ Any process of innovation entails the introduction of new perspectives, processes and distributional patterns and, in some cases, new individuals to undertake specific tasks.⁹⁰ This upsets entrenched and sometimes very powerful interests that have the potential to undo these new processes.

This was observed in a CDKN-funded study that looked at the integration of climate change and disasters in infrastructure projects in the eastern Himalayas, where entrenched political interests were a barrier to mainstreaming disaster risk reduction considerations into expensive infrastructure projects (see Box 6). Far from being a technocratic process that entails the unproblematic use of new knowledge to affect change, innovation is a complex political process that requires deft management and oversight.⁹¹

6.2 Factors that support and enable innovation

Innovation processes for DRM require effective leadership as they involve a large number of stakeholders.⁹² As Section 7 notes, securing leadership is fraught with challenges.⁹³ These include ensuring the right incentives: leaders need to feel that the investment of time and risk-taking behaviour (as any process of innovation and experimentation entails risks) will be adequately rewarded. Incentives could include appreciation and recognition from senior members of the organisation, fulfilment of personal beliefs or ambitions, or material and monetary rewards such as promotions.⁹⁴ Leadership is especially challenging in the context of innovation for DRM as risks in experimentation can be high, management can be cumbersome (as it requires the participation of numerous and diverse stakeholders) and, as discussed earlier in this section, difficult political issues need to be negotiated.⁹⁵

In most cases, an important enabling factor is the availability of finance for innovation.⁹⁶ There are many cases of how funding has spurred innovative changes to risk management. For example, Harris and Bahadur⁹⁷ studied the manner in which disasters, environmental and climate change issues were mainstreamed into a roads project supported by the Australian Government in Vanuatu. They found that available funding was the main factor that led to the adoption of this innovation; otherwise, roads were being built without adequate attention to sources of risk such as landslides.⁹⁸ However, as seen in Section 5, there are major challenges in securing financing for innovation, including existing sectoral financing mechanisms, the paucity of methodologies for calculating financial estimates, and problems with securing private sector financing.

Box 6. Mainstreaming risk in infrastructural development in the eastern Himalayas

A CDKN-supported study by the Ashoka Trust for Research in Ecology and the Environment (ATREE) analysed the ways in which climate change and disaster risk were perceived and interpreted by communities, civil society and government agencies in the eastern Himalayan region of India. More specifically, the study scrutinised newly commissioned dams, which had attracted substantial financial investment, and a rapidly expanding network of rural roads in the region, which were being put in place with more modest resources.

The researchers found that large and expensive dams were widely perceived to be increasing the risk of major disasters in this landslide-prone region. Similarly, the road network under study was also understood to enhance disaster risks, largely due to inadequate investment leading to poor quality construction. This was a classic case of the solution to one problem (the lack of rural connectivity) creating another problem (increased risk of serious landslides) due to inadequate risk awareness in development planning.

While the researchers found many challenges to mainstreaming DRM in both cases, they found that influencing the design and development of dams was particularly difficult. This was due to the number of vested interests that the initiatives attracted – a result of the vast financial sums involved. The development of the rural roads network also experienced substantial political involvement, but there were more openings for mainstreaming as decision-making processes were decentralised to the local level and the people charged with making decisions were more approachable.

Overall, the research highlighted the need for individuals with a good understanding of politics and political processes to be a part of efforts to ensure DRM is mainstreamed into infrastructure projects. This is because infrastructure projects are the source of substantial political capital for people at different levels of governance and it is easy for the mainstreaming agenda to threaten political interests and agendas. The study found that this is enhanced when the workings of government departments and ministries are hidden from external actors attempting to influence policy processes. This makes it particularly important for individuals with political acumen to be part of planning processes and exploit entry points for mainstreaming strategically.

There are other ways to encourage innovation. One important method of supporting innovation is to make it inclusive through the establishment multi-stakeholder platforms. The participation of diverse stakeholders, democratic power relations, and multi-level and polycentric governance of innovative processes are all elements of success.⁹⁹ Participatory processes support collaboration between diverse knowledge systems and points of view, and help to derive novel solutions to tackle risk and vulnerability. These processes can also help to navigate the potential political pitfalls that limit innovation. The engagement of key stakeholders at an early stage of innovation development and implementation also leads to better acceptance and understanding of such innovations. This can be seen

in the Ahmedabad Heat Action Plan case study, where engagement with local government partners from the outset was central to success (see Box 3).

A lot of effort has been invested in discovering methods of encouraging leadership for innovation, which will be discussed in more detail in the next section. As mentioned earlier in this section, experimentation and innovation are linked, and the possibility of failure is intrinsic to experimentation. Therefore, when creating an enabling environment for leadership on innovation, it is vital not to penalise the failure of controlled and measured attempts at innovation. Conversely, there should be incentives for those who actively make innovative attempts at mainstreaming DRM within their sectors. These could include giving people time, providing necessary training and, in certain cases, promotions or salary increments.¹⁰⁰

Financing encourages innovation and numerous ways to secure appropriate financing for mainstreaming have been discussed in Section 5. These include aligning sources of funding, refining methodologies for the cost–benefit analysis of mainstreaming, and creating an enabling environment for securing finance from the private sector. CDKN’s partnership with the Government of Pakistan to provide disaster risk insurance is one example on how progress with securing finances can be made (see Box 5).

7. Secure and sustain leadership

Challenges	Ways forward
There are several potential political pitfalls around leadership for mainstreaming DRM.	<ul style="list-style-type: none"> Map the different incentives around a project, as seen in the CDKN case study from the eastern Himalayas (Box 6). Deploy methods such as the ‘drivers of change’ approach and ‘political risk analysis’.
There are capacity constraints, gaps in knowledge and a weak mandate for mainstreaming.	<ul style="list-style-type: none"> Use peer-to-peer and expert-led training. Make organisational changes, for example include mainstreaming in job descriptions. Forge effective partnerships with organisations that have made progress with mainstreaming.

The preceding sections have alluded to the fact that leadership is a critical component of mainstreaming DRM in different sectors. At the city level, political leadership is more important than a city’s wealth when it comes to protecting lives and economic assets from disasters.¹⁰¹ Good leaders are often visionary individuals who can successfully make a case for mainstreaming DRM in decision-making, build trust, compile knowledge, raise awareness, forge partnerships, develop a vision and put it into operation.¹⁰² Leaders who see a need for change and can carry this through are critically important for innovation and for mainstreaming DRM in development planning, and the installation of good

managers helps to oversee transformational processes.¹⁰³ Once change has been initiated by a leader, 'champions' can emerge to sustain the mainstreaming agenda.¹⁰⁴

The value of leaders as catalytic agents steering successful change is clearly reflected in the CDKN case study on mainstreaming disasters and climate change in district planning processes in Gorakhpur, India (see Box 7). Here, an innovative local non-governmental organisation acted as a leader in place of an individual, providing new information and know-how on reducing vulnerability in a highly disaster-prone area. This was a catalyst for change in public planning regimes. Similarly, leadership from the city government in Cartagena was central to turning climate risk into an opportunity (see Box 1). Conversely, a lack of political leadership was a significant obstacle to integrating disasters and climate change issues within infrastructure projects in fragile eastern Himalayan regions (see Box 6). It is clear that well-informed and respected leaders at local, national and regional levels are central to the effective implementation of DRM practices within climate compatible development.

7.1 Constraints to leadership

While the critical importance of leadership is clear, securing and sustaining leadership can be hard. One reason is contextual political issues. Those pioneering or championing mainstreaming often disrupt existing political arrangements and threaten powerful interests. As discussed previously, there is a risk that the integration of risk management in development planning can conflict with the interests of important policy actors who want to maintain the status quo and have the ability to disrupt the mainstreaming process.¹⁰⁵

There are still substantial gaps in knowledge about mainstreaming. This makes the championing of this agenda difficult and can prevent mainstreaming champions from emerging. As discussed in the preceding sections, these knowledge gaps include the understanding of climate and disaster risks that are constantly evolving, and methods to achieve the deep organisational changes that are necessary to make mainstreaming happen.¹⁰⁶ In addition, the capacity and knowledge of the leader alone are not enough; this knowledge needs to be appropriately institutionalised. For example, efforts to mainstream DRM within Australian aid projects were severely disrupted when the champions leading these were transferred to another department. This suggests a clear need for systems to code and retain knowledge in order to support the transfer of leadership.¹⁰⁷

Capacity constraints can also be a challenge for leaders aiming to mainstream DRM into sectoral decision-making. These can result from the fact that staff working in core sectors within organisations or government departments cannot fit championing the new agenda into their schedules and work plans. As mainstreaming is a new agenda, it is usually not a formal part of job descriptions or on the list of duties that staff are expected to perform.¹⁰⁸ At the other end of the scale, staff in certain organisations and departments within core development sectors are expected to mainstream

Box 7. Enhancing flood resilience in Gorakhpur

The Gorakhpur District is one of the most flood-prone districts in eastern Uttar Pradesh, India. Flooding is a regular occurrence, putting the lives and livelihoods of local communities at risk. Based on directives included in the National Disaster Management Act 2005, the District Disaster Management Authority was asked to lead the preparation and management of District Disaster Management Plans. The planning undertaken by the Authority was largely focused on responding to floods, with limited attention to pre-disaster risk management and building long-term resilience. This is unsurprising: most District Disaster Management Authorities have little access to relevant data on climate projections and usually operate in separate policy and programme streams from climate change planners.

An initiative spearheaded by the Gorakhpur Environmental Action Group, in collaboration with the National Institute of Disaster Management and the Institute for Social and Environmental Transition is studying ways to enhance the integration of climate change and DRM planning in district planning. Part of the START-CDKN research programme, this initiative was originally designed as a pure research initiative, with the objective of making recommendations for incorporating climate change concerns into Gorakhpur's District Disaster Management Plans. But there has been a higher level of buy-in from the District Disaster Management Authority and other decision-makers. This has led to the development of a climate-sensitive plan for the Gorakhpur district.

The shift in thinking was achieved by sharing relevant scientific information on climate change trends and impacts with decision-makers. This was done in a manner that effectively conveyed the threats posed by climate change to the performance of various sectors at the district level. Building decision-makers' understanding of the urgency, relevance and implications of climate change, as well as the potential benefits of integrating climate resilience into district development plans (even in the face of uncertain climate projections), was useful.

Another part of the project was a structured and iterative process of shared learning dialogues and workshops with departmental staff and stakeholders. This fostered a collective understanding of vulnerability and resilience issues within and across departments.¹⁰⁹

such a wide range of issues (e.g. gender, child protection, disability) that they can suffer from 'mainstreaming fatigue'.

7.2 Ways to encourage leadership for mainstreaming DRM

Despite these challenges, there are ways to encourage leadership for mainstreaming DRM within development sectors. It is critical that champions and leaders understand that mainstreaming is a political process.¹¹⁰ This involves a number of tangible steps, starting with exercises in which leaders map the incentives of the main actors involved in mainstreaming process. This must be done before taking any major steps towards achieving the mainstreaming agenda.

Key messages for governments

- Focus on amending and altering institutional **practices**:
 - Reduce compartmentalisation, initially through small-scale strategic coordination.
 - Include mainstreaming in the remit of key officials.
 - Organise training for staff charged with planning functions in ministries.
 - Create incentives for action on mainstreaming.
- Develop enhanced **processes** for understanding risk:
 - Ensure that the planning of policy processes is open to diverse stakeholders.
 - Mandate risk evaluation, including through legislation.
 - Promote risk evaluation methods that are not data intensive.
 - Work closely with people who will use the data emerging from risk assessments.
 - Access and share risk assessment tools.
 - If needed, look at the feasibility of establishing technical bodies for risk assessment.
- Acknowledge that mainstreaming processes are highly **political**:
 - Give the intended beneficiaries of mainstreaming processes a voice.
 - Use the available tools to map political risks.
 - Build political momentum by understanding the costs and benefits of mainstreaming.
- Build effective **partnerships**:
 - Explore vertical partnerships between higher and lower levels of government for conducting risk analysis.
 - Shape business opportunities for private sector involvement in risk management.
 - Enhance interactions between staff in sectors and organisations with experience in mainstreaming.

The CDKN case study on mainstreaming climate change and DRM in infrastructure projects in the eastern Himalayan region demonstrates the importance of negotiating various vested interests in large projects (see Box 6). People championing the mainstreaming agenda could also employ methods such as the ‘drivers of change analysis’ or, for a macro-view, the ‘political risk analysis’.¹¹¹ These would allow leaders to anticipate and prepare for hurdles to mainstreaming strategies, then navigate around these and negotiate the numerous political pitfalls that await the promotion of new agendas.

Several measures can be put in place to support the capacity of emerging champions. Peer-to-peer learning and formal training, either from experts or from peers with experience of mainstreaming, are immensely valuable in securing and supporting champions for the mainstreaming agenda.¹¹² Leadership can also be encouraged through the explicit inclusion of mainstreaming as a key responsibility in the job descriptions for senior staff working in core sectors.¹¹³ Finally, leadership for mainstreaming can emerge when staff in core sectors interact with partner organisations and other departments that may have made more progress with the agenda.

8. Conclusions and cross-cutting messages for governments

There is a clear need to mainstream DRM and climate extremes in key development sectors, in order to minimise the impact of shocks and stresses on development progress. This Guide has outlined the benefits, challenges and opportunities in mainstreaming DRM in development planning in five themes: securing the right policy environment; leadership; knowledge of relevant risks and means of managing these risks; obtaining consistent financing; and innovation. While each section set out a detailed list of ways forward, there are cross-cutting messages for governments that want to mainstream disaster risk management in their core development sectors.

1. Governments need to make changes to key institutional practices to support and deepen the mainstreaming of DRM in development policy. The compartmentalisation of DRM, climate change planning and sectoral development as separate policy streams is a hindrance to risk-informed planning, as well as to securing financing for mainstreaming. This is not to say that the relevant ministries should combine, but rather governments need to encourage greater collaboration between planning processes across sectors and find ways to align funding

streams to support risk-informed decision-making across government. Other organisational changes, such as placing a stronger emphasis on mainstreaming within the remit of officials in important sectors, regular training (especially for staff engaged in planning) and creating incentives for action on mainstreaming, can go a long way towards meeting this agenda.

2. Enhanced processes for understanding and evaluating risk as a central step in decision-making are vital. Including a variety of stakeholders in policy-making processes brings different kinds of knowledge to the table and can help to increase the capacity to understand and act on disaster risk. Governments can also mandate the use of robust risk-evaluation methods as part of sectoral decision-making processes (perhaps through appropriate legislation) and promote methods that are not heavily reliant on data, which is often scarce. Producers of disaster risk assessments, whether affiliated to governments or otherwise, can engage with the intended end users when planning and designing risk assessments. This will ensure the information they produce is relevant, accessible and has an impact. Sometimes this will require the establishment of technical bodies to take on this role; at other times it could be a case of gainfully employing the tools already in circulation.
3. This Guide calls for wider acknowledgement that mainstreaming processes are highly political. Mainstreaming DRM is an innovation in policy and planning processes, and as such carries the potential to upset entrenched interests. Sustaining leadership for mainstreaming requires the careful negotiation of existing political dynamics. Innovation for mainstreaming will be

successful only when its intended beneficiaries have a hand in defining the manner in which the process will unfold. Governments can ensure that mainstreaming processes navigate political complexities by using the available innovative tools and protocols, as well as ensuring that mainstreaming processes are inclusive, participatory and seek the buy-in of relevant stakeholders in the early stages. Building the evidence base on the costs and benefits of risk-informed decisions and risk-reduction investments can further help the mainstreaming cause.

4. The importance of diverse partnerships to successfully mainstream DRM and climate extremes is evident throughout this Guide. Section 2 outlines vertical partnerships between higher and lower levels of government as one way to reduce gaps in risk analysis capacity at the local level. Section 3 underlined the potential of partnerships with the private sector for securing finances for mainstreaming, and the steps that governments could take to encourage such participation. And Section 4 showed that leadership for mainstreaming can emerge when staff in core sectors interact with partners who have more experience of mainstreaming.

In essence, this Guide has argued that governments need to lay greater emphasis on '4 Ps' – practices, processes, politics and partnerships. This would help overcome the hurdles in understanding risk, achieving risk-informed planning, obtaining finances, innovating for mainstreaming and sustaining leadership. While many of these findings are intended for uptake by governments, some also have implications for international policy frameworks on risk and resilience (see Box 8). These messages will allow

Box 8. Mainstreaming disaster risk management in international policy frameworks for disasters and development

The international framework for disaster risk reduction, the Hyogo Framework for Action, will be renegotiated through an intensive series of regional meetings in 2014 before the new agreement (HFA2)¹¹⁴ is signed in March 2015 in Sendai, Japan. The framework to follow the Millennium Development Goals, which end in 2015, will be defined on a similar time frame. Therefore, as we edge closer to 2015, we have an unprecedented opportunity to lock in favourable and multifaceted international policies for tackling disaster risk worldwide. It is encouraging to see an emerging consensus on the need to include resilience to shocks and stresses in the successor framework to the Millennium Development Goals, and it looks to be almost certain that targets and indicators on resilience will be included in relevant goals.¹¹⁵

There is also clear recognition of the need to include the mainstreaming of DRM in core sectors as a priority for the HFA2. In drafting the new text, negotiators from member states can learn from the messages outlined here to argue for an agreement that:

- supports local voices to advocate for the prioritisation of resources for DRR at the local level
- provides pathways for vertical and horizontal collaboration, and partnerships across government to support technical capacity in local and sectoral policy-making
- encourages governments to mandate the use of robust but 'data-light' risk assessment methods as part of sectoral decision-making processes
- aligns relevant funding streams
- encourages donors to include DRM criteria in funding guidelines
- supports leaders to provide an alternative vision to existing regimes in support of mainstreaming DRM in development planning
- puts responsibility for leadership on mainstreaming DRM into sectoral development in the hands of those best positioned to do so.

governments and other powerful international actors to bring a true vision of mainstreaming to life and help marginalised populations in some of the world's most vulnerable areas to successfully battle the impacts of disasters and climate change.

Endnotes

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- 114 An upcoming Guide, to be jointly produced by CDKN and ODI, will provide detailed guidance on a broad range of issues for those navigating the HFA2 process. It will be available on the CDKN website in April 2014 and hard copies will be available at international UNISDR conferences in 2014.
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About CDKN

The Climate and Development Knowledge Network (CDKN) aims to help decision-makers in developing countries design and deliver climate compatible development. We do this by providing demand-led research and technical assistance, and channelling the best available knowledge on climate change and development to support policy processes at the country level.

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AIDMI is a community-based action planning, action research and advocacy organisation, working towards bridging the gap between policy, practice and research related to disaster risk mitigation and adaptation to climate change risk. AIDMI has expanded its work over the years to cover nine types of disasters in twelve areas of India and beyond to eight countries in Asia.



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