

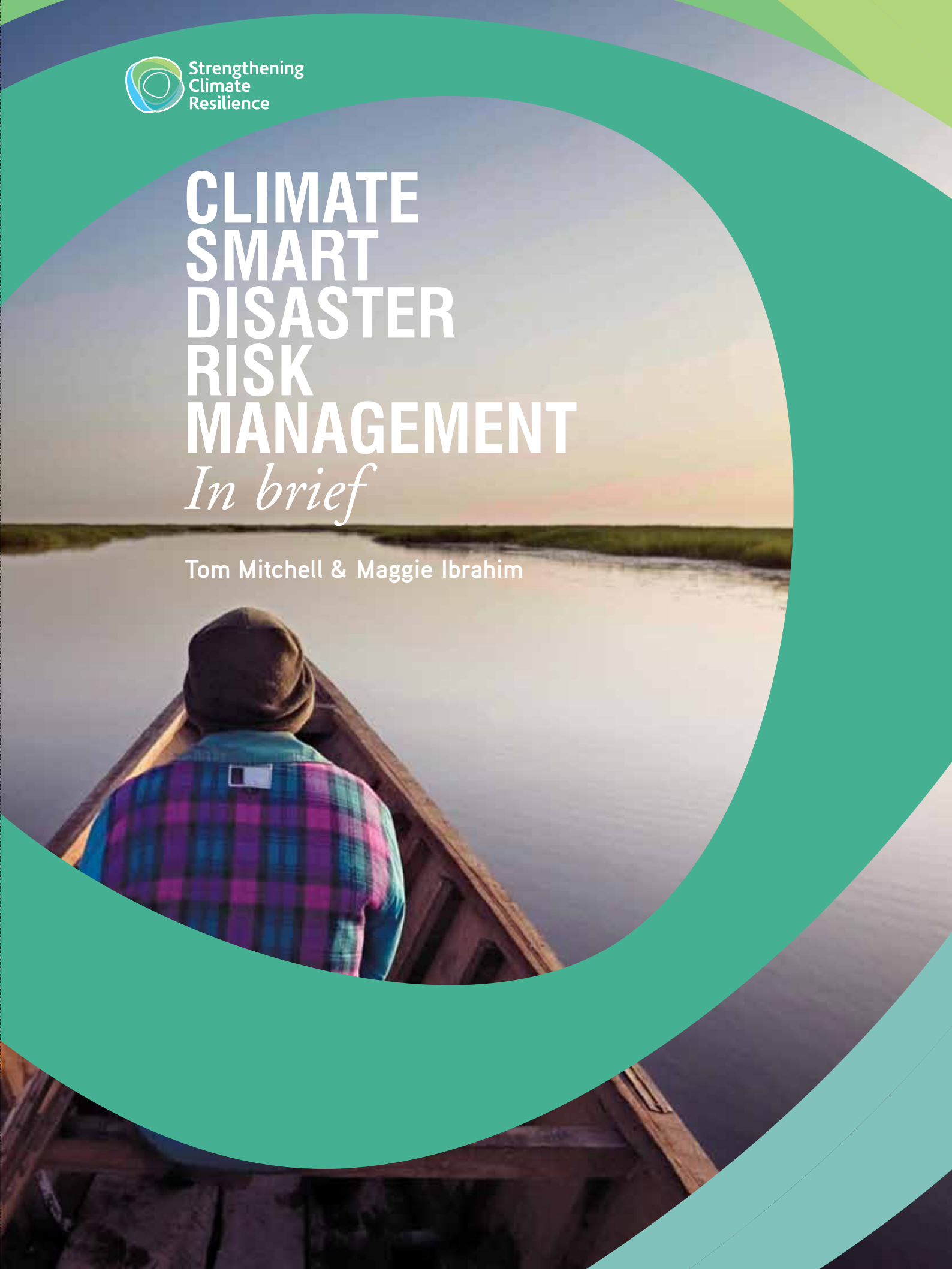


Strengthening  
Climate  
Resilience

# CLIMATE SMART DISASTER RISK MANAGEMENT

*In brief*

Tom Mitchell & Maggie Ibrahim



The impacts of climate change on disaster risks are profound, complex and somewhat uncertain (see right). We already know that trends in economic and livelihoods-related disaster losses are on an upward curve and the majority are associated with extreme weather events. These trends are likely to continue and may even accelerate as some hazards become more severe and unpredictable and greater numbers of vulnerable people are living in harm's way.

Despite this reality, there is little collective understanding of how current efforts to manage disaster risk can be enhanced and scaled-up to cope with the impacts of climate change. The focus on immediate disaster relief has slowed meaningful global investment in disaster risk management (DRM), even as expenditure on humanitarian response is increasing to meet ever more serious need. The difficult truth is that the way we are approaching disaster risks today is almost certainly not good enough to meet tomorrow's challenges. Relying on 'business-as-usual' DRM will lead to failure without a significant shift in the way in which risks are calculated, interventions designed, investments made, capacities developed and partnerships progressed. Only by switching to this climate-smart version of disaster risk management can we feel confident that our efforts will enhance disaster resilience in a changing climate.

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## What are the impacts of climate change on disaster risk?

### Climate Change is...

#### Increasing the frequency and severity of some, but not all, hazards

The Intergovernmental Panel on Climate Change (IPCC, 2007) concluded that the frequency and severity of hot and cold extremes and heavy precipitation events is increasing and this trend will continue. At the moment no clear patterns are seen with tropical cyclones. Confidence in understanding or projecting changes in hazards and extreme events depends on the type of extreme event, as well as on the region and season.

#### Increasing people's vulnerability and exposure to regularly experienced shocks and stresses

Climate change is decreasing crop yields, increasing water scarcity, leading to a loss of biodiversity and natural assets provided by ecosystems, causing new patterns of disease and increasing respiratory illnesses, and possibly has become one of the triggers of migration and new patterns of conflict. These trends are projected to worsen (IPCC, 2007). This means vulnerability is increasing and disaster losses may worsen even without any discernable change to the severity or frequency of hazards.

#### Increasing uncertainty and unexpected events

The complexity of the physical and human system and their interactions dictate that scientific models about future climate change impacts remain uncertain. Accordingly, the inability to predict the exact magnitude or timing of extreme climate-related events means that people must be prepared for the unexpected, whether related to the type or severity of the hazard or in the way in which the human system responds to it.

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As we pass the mid-point of the Hyogo Framework for Action (HFA), countries striving to meet global commitments on disaster reduction are calling for a smarter, more integrated approach to DRM (GFDRR Stockholm Policy Forum 2009 and UNISDR 2009). In this context, a Climate Smart Disaster Risk Management (CSDRM) approach presents considerable opportunities for governments and civil society. It is a legitimate first step in adapting to climate change and climate variability, will help ensure DRM investments are durable and value-for-money, and offers practical guidance at both national and local scales to deal with new and evolving threats. Existing rich capacity and expertise on DRM provides an excellent foundation for effective CSDRM and climate-smart development strategies.

CSDRM builds on this foundation by offering:

- A conceptual guide to increased coherence and complementarity with climate change adaptation goals.
- A call to refocus DRM efforts on tackling poverty and other root causes of vulnerability.
- Evidence of the benefits of promoting the longer-term adaptive capacity of people and organisations to shape their own sustainable solutions to changing risks.
- Lessons on the importance of forming innovative partnerships in order to better equip ourselves to manage uncertainty and unexpected events.

# CSDRM: IN A NUTSHELL

Responding to the need for an integrated approach to disasters, development and climate change, CSDRM is:

**an integrated social development and disaster risk management approach that aims simultaneously to tackle changing disaster risks, enhance adaptive capacity, address poverty, exposure, vulnerability and their structural causes and promote environmentally sustainable development in a changing climate.**

The CSDRM approach (see Figure 1) provides a guide to strategic planning, programme development and policymaking and should be used to assess the effectiveness of existing DRM policies, projects and programmes in the context of a changing climate. It is intended for those responsible for managing disaster risks at national, sub-national or community level and has been developed through extensive consultation with policymakers and practitioners at these scales. The approach has three interlinked pillars of action, which are founded on longstanding concepts – mainly related to the progression of vulnerability from root causes to unsafe conditions (Wisner et al, 2004) and to those associated with resilience, adaptive capacity and uncertainty (Holling, 1973 and Folke, 2006 for example). The three pillars of action are:

## **Tackle changing disaster risk and uncertainties**

Pillar one supports the priority areas of the HFA, highlighting the importance of collaboration between multiple actors. It calls for improved information on risks by conducting detailed risk assessments which recognises the value of multiple sources of knowledge. It highlights the importance of increasing access to information by all stakeholders through education, early warning and the media while foregrounding measures to understand and address vulnerability and the conditions creating risks. The CSDRM approach treats climate change as a key consideration and attempts to insert climate change into the most critical, climate-sensitive elements of the HFA.

## **Enhance adaptive capacity**

Adaptive capacity refers to our ability to

manage change sustainably by strengthening resilience<sup>1</sup>. Promoting adaptive capacity means that institutions and networks learn and use knowledge and experience and create flexibility in problem solving (Scheffer et al, 2000 and Berkes et al, 2003). The key characteristics which enhance adaptive capacity have been identified as: promoting diversity; creating flexible, effective institutions; accepting non-equilibrium; adopting multi-level perspectives; integrating uncertainty; ensuring community involvement; promoting learning; advocating for equity; recognising the importance of social values and structures and working towards preparedness, planning and readiness<sup>2</sup>. Enhancing adaptive capacity is a key strategy for managing increasing uncertainty associated with a changing climate and allows people and organisations to respond to shocks and unexpected events more effectively. The CSDRM approach weaves together many of the characteristics of adaptive capacity highlighted above and offers guidance on how to consider these in a practical way.

## **Address poverty, vulnerability and their structural causes**

Pillar three is strongly influenced by the 'pressure and release' model (Wisner et al, 2004) and longstanding research that attributes the causes of disasters to failures in development (Bankoff et al, 2003, for example). Wisner et al's model treats root causes, dynamic pressures, unsafe conditions and hazards as all contributing to disaster risk. Root causes underscore the importance of access to power, structures and resources. A lack of skills and institutions (markets and press freedom) coupled with macro forces, such as urbanisation and population growth, contribute to vulnerability.

The CSDRM approach recognises the complexities and interdependencies of any one intervention and thus promotes the interrelation of the three pillars. Guiding questions that supplement the actions depicted in Figure 1 are examples to stimulate discussion, planning and action in a specific context. They are not exhaustive and the CSDRM approach needs to be tailored to local realities and specific challenges.

## **How has CSDRM been developed?**

The CSDRM approach has been developed and co-created by more than 500 practitioners, policymakers, scientists and academics from climate change, disasters and development communities in ten 'at-risk' countries in Africa and Asia (Bangladesh, India, Nepal, Sri Lanka, Kenya, Tanzania, Sudan, Cambodia, Indonesia and the Philippines). Three regional workshops offered further opportunities to refine the approach with leading experts in South Asia, South East Asia and East Africa. More intensive fieldwork was conducted in Cambodia (Polack, 2010), India (Hedger et al, 2010) and Sri Lanka (Ibrahim, 2010) to test the use and applicability of the emerging approach in different contexts. In addition, studies were also commissioned to examine: (a) the applications of the concept of resilience to DRM and adaptation (Bahadur et al, 2010); (b) the convergence between DRM and adaptation in funding, policy and practice (Mitchell et al, 2010); and (c) the extent to which environmental and low carbon considerations are included in DRM interventions (Urban et al, 2010). These studies, along with the three country studies, compliment this document and should be viewed as supporting material. They have been published as the first six papers in the 'Strengthening Climate Resilience Discussion Series' (see back cover).

## **How does CSDRM support and build on other frameworks and approaches?**

The CSDRM approach builds on DRM, climate change adaptation and development concepts and approaches with the purpose of accelerating progress on the HFA and efforts to promote 'disaster-resilient communities' (Twigg, 2007). However, added emphasis is placed on strategies to manage uncertainty, particularly through enhancing adaptive capacity and on the critical importance of addressing poverty and vulnerability holistically, which includes focusing on their root causes and on integrating principles of environmental sustainability. It could be argued that these elements have been underplayed in the HFA or practical approaches to community-based DRM to date.

<sup>1</sup> The term 'resilience' is increasingly used in climate change and disaster discourses and in policies and programming related to these issues. It has become common to describe the intersection between these two fields and those of poverty and development as 'climate resilient development'. The SCR programme recognises the difficulty in operationalising the concept of resilience and its multiple meanings and as such has chosen to focus on more tangible and practical dimensions of 'adaptive capacity'. Carpenter et al (2001) highlight that little attention has been paid to the operational indicators of resilience.

<sup>2</sup> For more details on the ten characteristics, SCR Discussion Paper 1, The Resilience Renaissance? Unpacking of Resilience for Tackling Climate Change and Disasters by Aditya V. Bahadur, Maggie Ibrahim and Thomas Tanner.

# NEXT STEPS: THE FUTURE OF CSDRM

## How to use the CSDRM approach

CSDRM brings together the three pillars set out above in an integrated approach to DRM, adaptation and development. Many actions cut across the three pillars, which should not be treated separately, but more as a way of ordering thoughts and discussions. The twelve actions should be treated as a menu and any project, programme or policy should seek to integrate actions from each pillar, rather than focus on just one. No single CSDRM intervention could possibly integrate every one of the twelve actions. Nonetheless, actions across the three pillars provide a way of prompting those managing disasters risks to develop processes to ensure they are not accentuating poverty or vulnerability or creating new risks. Naturally there are limits to what disaster risk managers can achieve alone, so the CSDRM approach highlights the importance of working in partnership with development and climate change stakeholders to ensure DRM and development outcomes are more robust to changing disaster risks.

To stimulate discussion, inform climate smart planning and action, and to take account of specific contexts, guiding questions are provided for each of the three pillars. These are not exhaustive and need to be tailored to local realities and specific challenges. In 2011, we will identify and develop ideas and guidance notes on how to implement specific action points.

## Reflections to date

Fieldwork in Cambodia, India and Sri Lanka and evidence gathering across the three regions has demonstrated that, despite challenges, government and non-government actors are already making real efforts to manage disaster risks with a 'climate-smart' approach. The institutional basis is there. Making the final shift to CSDRM, it seems, is largely reliant on an increasingly collaborative and strategic approach to traditional DRM, at individual and institutional levels. The case studies and project reviews highlight the flexibility of CSDRM as an analytical and evaluative tool at different scales, finding that:

- Integrating climate scenarios, whether at the regional, sub-national or local level, requires access to climate information and data. This can be fraught with challenges such as access to required data and expertise. Making connections with independent intermediaries – such as universities – that can process climate data and interpret findings at various levels is a way to overcome this challenge.
- There are numerous entry points for a CSDRM approach. Building on existing programmes and policies offers opportunities to identify champions for the approach and to create tools and procedures that are grounded in local realities.
- Promoting the integration of the three pillars of CSDRM into policy and practice requires a range of 'soft' skills: being able to build partnerships, being flexible, adopting new practices and fostering learning. This way of working will require staff investment and must be understood in terms of building people's capabilities to create change in support of sustainable livelihoods.
- A certain level of independence is required to be flexible and innovate. Donors, governments and business should support independence and ensure accountability measures are in place and maintained when supporting disasters programmes.
- Dialogue and access to decision-making are critical at all levels – from the regional to the local. Creating spaces for a range of stakeholders to access information and participate in decision making – from resource allocation to vulnerability mapping and policy/programme design – is critical if positive development outcomes are to be achieved in a changing climate. This requires partnership and confidence between stakeholders (government departments, business, advocacy networks, faith groups and regional initiatives).
- Climate change can be a driver for greater integration across sectors, institutions, policies and programmes as well as generating greater commitment to environmentally sustainable practises.

Climate change can be a driver of change and innovation in DRM. The Strengthening Climate Resilience (SCR) Programme recognises this opportunity and will focus on deepening the evidence base for a CSDRM approach and advocating for the uptake of the approach by practitioners, policymakers and academics.

Future outputs will include:

- Guidance on implementing the 12 actions of the CSDRM approach, drawing from the rich existing guidance already available.
- A multi-media evidence base of CSDRM in policy and practice, drawn from across the ten SCR focus countries.
- Reflections from organisations and policy departments about their experiences of applying CSDRM in their own work.

The above outputs will be achieved by working closely with approximately 100 organisations already involved in the consultation process. This 'friends of SCR' network will also help to influence other initiatives that are attempting to integrate DRM, climate change responses and development and encourage them to explore the benefits of adopting the CSDRM approach.

Throughout this process, the SCR web platform will be a valuable source of resources on the convergence of disasters, climate change and development – through sharing of field cases that best demonstrate aspects of the CSDRM approach, information about the latest and forthcoming evidence, videos, audio and presentations from SCR's consultations and spaces where the challenges and ways of applying CSDRM in different contexts are discussed.

[www.csdrm.org](http://www.csdrm.org)

# The Climate Smart Disaster Risk Management Approach

## Strengthening Climate Resilience

The questions in the approach are suggestions only and there may well be others



### 1. Tackle changing disaster risks and uncertainties

#### 1a

##### **Strengthen collaboration and integration between diverse stakeholders working on disasters, climate and development**

To what extent are climate change adaptation, disaster risk management and development integrated across sectors and scales? How are organisations working on disasters, climate change and development collaborating?

#### 1b

##### **Periodically assess the effects of climate change on current and future disaster risks and uncertainties**

How is knowledge from meteorology, climatology, social science, and communities about hazards, vulnerabilities and uncertainties being collected, integrated and used at different scales?

#### 1c

##### **Integrate knowledge of changing risks and uncertainties into planning, policy and programme design to reduce the vulnerability and exposure of people's lives and livelihoods**

How is knowledge about changing disaster risks being incorporated into and acted upon within interventions? How are measures to tackle uncertainty being considered in these processes? How are these processes strengthening partnerships between communities, governments and other stakeholders?

#### 1d

##### **Increase access of all stakeholders to information and support services concerning changing disaster risks, uncertainties and broader climate impacts**

How are varied educational approaches, early warning systems, media and community-led public awareness programmes supporting increased access to information and related support services?

### 2. Enhance adaptive capacity

#### 2a

##### **Strengthen the ability of people, organisations and networks to experiment and innovate**

How are the institutions, organisations and communities involved in tackling changing disaster risks and uncertainties creating and strengthening opportunities to innovate and experiment?

#### 2b

##### **Promote regular learning and reflection to improve the implementation of policies and practices**

Have disaster risk management policies and practices been changed as a result of reflection and learning-by-doing? Is there a process in place for information and learning to flow from communities to organisations and vice versa?

#### 2c

##### **Ensure policies and practices to tackle changing disaster risk are flexible, integrated across sectors and scale and have regular feedback loops**

What are the links between people and organisations working to reduce changing disaster risks and uncertainties at community, sub-national, national and international levels? How flexible, accountable and transparent are these people and organisations?

#### 2d

##### **Use tools and methods to plan for uncertainty and unexpected events**

What processes are in place to support governments, communities and other stakeholders to effectively manage the uncertainties related to climate change? How are findings from scenario planning exercises and climate-sensitive vulnerability assessments being integrated into existing strategies?

### 3. Address poverty & vulnerability and their structural causes

#### 3a

##### **Promote more socially just and equitable economic systems**

How are interventions challenging injustice and exclusion and providing equitable access to sustainable livelihood opportunities? Have climate change impacts been considered and integrated into these interventions?

#### 3b

##### **Forge partnerships to ensure the rights and entitlements of people to access basic services, productive assets and common property resources**

What networks and alliance are in place to advocate for the rights and entitlements of people to access basic services, productive assets and common property resources?

#### 3c

##### **Empower communities and local authorities to influence the decisions of national governments, NGOs, international and private sector organisations and to promote accountability and transparency**

To what extent are decision-making structures de-centralised, participatory and inclusive? How do communities, including women, children and other marginalised groups, influence decisions? How do they hold government and other organisations to account?

#### 3d

##### **Promote environmentally sensitive and climate smart development**

How are environmental impact assessments including climate change? How are development interventions, including ecosystem-based approaches, protecting and restoring the environment and addressing poverty and vulnerability? To what extent are the mitigation of greenhouse gases and low emissions strategies being integrated within development plans?

Figure 1: The Climate Smart Disaster Risk Management Approach

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## About 'Strengthening Climate Resilience'

This publication is part of the Strengthening Climate Resilience Discussion Series which aims to elaborate concepts and application of the Climate Smart Disaster Risk Management approach. All papers are available free to download through the Strengthening Climate Resilience (SCR) website: [www.csdrm.org](http://www.csdrm.org)

To date, the SCR discussion series includes:

- *The Resilience Renaissance? Unpacking of Resilience for Tackling Climate Change and Disasters*. Bahadur, A.; Ibrahim, M. and Tanner, T. (2010) Strengthening Climate Resilience Discussion Paper 1, Brighton: IDS
- *Assessing Progress on Integrating Disaster Risk Reduction and Climate Change Adaptation in Development Processes*. Mitchell, T., Van Aalst, M. and Silva Villanueva, P. (2010) Strengthening Climate Resilience Discussion Paper 2, Brighton: IDS
- *Greening Disaster Risk Management: Issues at the Interface of Disaster Risk Management and Low Carbon Development*. Urban, F., Mitchell, T. and Silva Villanueva, P. (2010) Strengthening Climate Resilience Discussion Paper 3, Brighton: IDS
- *Integrating Climate Change into Regional Disaster Risk Management at the Mekong River Commission*. Polack, E. (2010) Strengthening Climate Resilience Discussion Paper 4, Brighton: IDS
- *Building Climate Resilience at State Level: DRM and Rural Livelihoods in Orissa*. Hedger, M., Singha, A. and Reddy, M. (2010) Strengthening Climate Resilience Discussion Paper 5, Brighton: IDS
- *Post-Disaster Housing Reconstruction in a Conflict-affected District, Batticaloa, Sri Lanka: Reflecting on the Climate Smart Disaster Risk Management Approach*. Ibrahim, M. (2010) Strengthening Climate Resilience Discussion Paper 6, Brighton: IDS

For other publications from SCR on the Climate Smart Disaster Risk Management Approach:

- *Climate Smart Disaster Risk Management*. Mitchell, T.; Ibrahim, M.; Harris, K.; Hedger, M.; Polack, E.; Ahmed, A.; Hall, N.; Hawrylyshyn, K.; Nightingale, K.; Onyango, M.; Adow, M. and Sajjad Mohammed, S. (2010), Strengthening Climate Resilience, Brighton: IDS

## SHARE YOUR VIEWS & EXPERIENCE

We are eager to hear your thoughts and reflections on how useful CSDRM has been for your work and how you see the approach informing policy and practice. If you would like to be involved in SCR meetings or work with the programme to trial the CSDRM with your organisation, please visit the SCR website [www.csdrm.org](http://www.csdrm.org) or send an email to [info@csdrm.org](mailto:info@csdrm.org)

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