

# Integration of Disaster Risk Reduction and Climate Change Adaption for Sustainable Development

## 1. EXECUTIVE SUMMARY

Climate change increases disaster risk and the problem is becoming more severe. Climate change affects the magnitude and frequency of extreme disasters, putting and response mechanisms and economic planning under immense stress.<sup>1</sup> Changes in climatic conditions and climate variability exacerbate underlying risk factors, and it also generates new threats for a region which is not prepared for such disasters.<sup>2</sup> It is essential that the climate change and disaster management communities collaborate to address such issues. Climate change adaptation policies and measures must be built on improving DRR efforts in order to be more efficient and effective. Moreover, DRR approaches can only be sustainable if they are accountable to impact of climate change.<sup>3</sup> The connections between DRR and CCA are a result of a decade of progress in the field of DRR. The newest addition to this school of thought is the SFDRR, the framework reaffirmed the need to see disasters within the context of sustainability, climate change adaption and poverty eradication as a method of building capacity and disaster resilience. SFDRR holds that DRM is a crucial component of sustainable development, building on the Hyogo Framework that preceded it.

The SFDRR promotes the importance of climate change adaption and promotes “the conduct of comprehensive surveys on multi-hazard disaster risks and the development of regional disaster risk assessments and maps, including climate change scenarios.” It also states the need to focus on sustainable solutions when dealing with multi-hazard Disaster Risk Reduction through sustainable use of resources, incentives and decision-making responsibilities tailored to the local context. Empowering the authorities is crucial for bridging the gap between theory and practice. Without stakeholder involvement, authorities cannot obtain all the necessary information, and without a supporting legal framework, it does not have the power to implement changes. Importantly, SFDRR advocates that DRR should be integrated into multilateral and bilateral development programs that aim to tackle issues in adaption to climate change and sustainable development, as well as poverty reduction, natural resource management, the environment and urban development. Consequently, these two areas should be seen as part of a wider context, and it has to be considered that collaboration between stakeholdres is essential for future progress in the area.

A lack of legal oversight, accountability and engagement of multiple stakeholders are the most prevalent issues in South Asia and the Asia-Pacific Region. In both regions, local disaster management has become increasingly important and tied to climate change. Placing DRR in the context of CAA can achieve:

- Reduction of climate-related disaster casualties through more widespread implementation of DRR measures that are linked with adaptation
- More efficient use of financial, human and natural resources in a sustainable manner that includes community needs and climate change adaptation
- Increasing effectiveness and sustainability of both adaptation and DRR approaches<sup>4</sup>

### Key Words

Disaster Risk Reduction; Climate Change Adaptation; Climate Change; Sustainable Development; Response Mechanisms; Disasters; SFDRR; Sustainability; Poverty eradication; Capacity Building; Disaster Resilience; Sustainable Solutions; Decision Making; Stakeholders' involvement; Development Programmes; Natural Resource Management; South Asia-Pacific Region; Local Disaster Management; Effectiveness; Early Warning Systems; Disaster Preparedness; Resilient Societies; Global Warming; Hazards; Policy and Strategic Framework; Advocacy and Information Sharing; Institutional arrangement; Leadership and Management; Food and Livelihoods Security; Reducing Community Vulnerability; Achieving Sustainable Development; Community-based Risk Reduction.



Efforts to reduce the impact of climate change are known as climate change adaptation. CCA is “The adjustment in natural or human systems in response to actual or expected climate or their effects, which moderates harm or exploits beneficial opportunities.”<sup>9</sup> This chimes well with the practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters. The objective is to reduce the exposure of communities to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.” The additional risks brought by climate change must be managed effectively,

## 2. CONTEXT AND IMPORTANCE OF THE PROBLEM

The severity of disasters in both the Asia-Pacific and South Asian contexts should not be understated. In 2015, Asia-Pacific continued to be the world's most disaster prone region.<sup>5</sup> On average, 232 million people are affected by different types of disasters every year.<sup>6</sup> Losses from disaster have risen over the past decade affecting millions of people with the in South Asia and Asia-Pacific regions, this brings grave consequences for community, livelihoods and dignity of people, However it has to be considered that many are the improvements and progresses in the field of DRR. There has been progress and development in the field. Many experts link the rise in disasters to climate change, with almost half of weather related disasters being caused by climate change in 2014.<sup>7</sup>

Introducing legislation and policies for DRR such as establishing early warning systems and increasing the level of disaster preparedness have shown the progress in both regions over time, being Indonesia a keen example on it.<sup>8</sup> However, more can be done to build fully disaster- resilient societies that can sustainably protect themselves in the local context as well as adapt to climate change. DRR is an important element of climate change adaptation. Some of the impacts of climate change include: increasing the frequency and severity of the hydro-meteorological events, rising temperatures and changing weather patterns. As a result of global warming, climate related hazards like floods, droughts, heat waves, and cold waves are expected to become more frequent and intense such as tropical cyclones/hurricanes and heavy rainfall. This will increase societal vulnerabilities as climate trends will damage livelihoods, food security and increase poverty, increase poverty. Thus, a collaborative solution is paramount. As it has been mentioned Climate Change is altering the face of disaster risk, not only through increased weather-related risks, sea-level and temperature rises, but also through increasing societal vulnerabilities - for example, water availability, agriculture and ecosystems.

especially attention should be given to the uncertainty of climate change impacts and how this will affect long term societal vulnerabilities. Climate change is a new factor that will act as an additional stress towards peoples' vulnerabilities.

Although the two terms DRR and CCA cannot be used interchangeably, there is a large amount of cross over and common interest involved. DRR deals with all hazards, including hydro-meteorological and geophysical hazards, while CCA deals exclusively with climate-related hazards associated with changes in the average climate conditions. CCA also considers the long-term adjustment to changes in gradual changing climatic condition, including the opportunities that this can provide, whereas DRR is predominantly interested in extremes leading to disasters. However, the point of convergence between DRR and CCA is in their management of climate-related risk. DRR and CCA share common objectives such as reducing community vulnerability and achieving sustainable development. They also share a common conceptual understanding of the components that make up risk and the methods and process to build resilience; both highlight exposure and vulnerability as a product of risk. Both exposure and vulnerability are compounded by other societal and environmental trends, such as urbanization, environmental degradation, and the globalization of markets. Thus, to reduce these risks, exposure needs to be minimized, vulnerability reduced, and capacities for resilience strengthened. This is a dynamic process requiring continual effort across economic, social, cultural, environmental, institutional and political spheres to move from vulnerability to resilience.<sup>10</sup>

Conscious efforts and achievements have been made across both regions and many achieve. Bhutan endorsed fully the shift from managing disasters to managing risks and in the future it will fully integrate climate change into DRR as part of its development project. Other examples such as the Government of Nepal introduced a national platform for

coordinating landslide risk assessments.<sup>11</sup> This work was distributed to local governments and communities were consulted. According to report, Nepalese local residents identified lack of “green” or “eco-safe” post-earthquake construction guidelines, which are specifically tailored to the Nepal context, which takes into account the entire supply chain of sustainable reconstruction. Often during times of crises, solutions are temporarily put in place and Nepal is under pressure to rebuild itself quickly. The Strategic Environmental Assessment (SEA) assesses and mitigates potential environmental impacts of proposed policies.

In order to better prioritize environmental adaptation interventions, researchers in Bangladesh, Thailand, India and Japan employed a multi-criteria assessment methodology called the analytic hierarchy process (AHP) to capture both subjective and objective evaluation measures. Selected results suggest the importance of access to sanitation, compensation, and disaster preparedness plans for reducing non-economic loss and damages following cyclones. Low importance is attached to insurance as it is rarely considered for non-economic losses, and increasing income does not necessarily lead to immediate improvements in non-economic aspects of life. In order to raise the profile of non-economic loss and damage on the political agenda, governments must be provided with compelling evidence for its importance, so that indicators can be incorporated into existing forms of data collection.<sup>12</sup> To summarise these issues, the following objectives must be realised in order to make disaster resilient communities able to adapt to climate change:

- sustainable adaptation;
- community participation in planning and managing DRR and CCA;
- vulnerability and risk assessment methods for adaptation planning;
- good governance and capacity-building; and
- linking DRR and CCA.

### 3. CRITIQUE OF POLICY OPTION(S)

The outcome document of the United Nations Conference on Sustainable Development, held in 2012, entitled “The future we want”,<sup>13</sup> called for disaster risk reduction. It aims to integrate at all levels resilience practices to disasters. They need to be addressed with a renewed sense of urgency in the context of sustainable development and poverty eradication. It was also linked with urgent environmental threats and reaffirmed all the principles of the Rio Declaration on Environment and Development.<sup>14</sup> However, policy options need to include governmental activity; and a clear link between DRR and CCA needs to be established that can be utilised and accepted by all national governments

The Sendai Framework, which was adopted at the 3rd United Nations World Conference on Disaster Risk Reduction in Japan on 18 March 2015, endorsed a major shift in emphasis from disaster management to disaster risk management. The global target (f) is to “substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030”. In order to contribute and achieve

the implementation of the global targets, and also contribute to the achievements of the Sustainable Development Goals on Poverty (SDG1) and Innovation and Infrastructure (SDG13) urgent action needs to be taken to combat climate change and its impacts.

There are two general principles that apply to all contexts: First, a National Society needs to ensure that it has adequate capacity at relevant levels to mainstream DRR and CCA - if capacity gaps are identified, these need to be filled through training, support from headquarters or through linkages with external partners such as research institutes. Second, risk should be regularly monitored (at least once per year). If changes in circumstances and risk are identified, programming choices and activities may need to be adapted to these changes.

DRR has recently focused its attention on aligning risk reduction with sustainable development and moving closer to other development initiatives in which climate change is a keen issue to address. The Global Assessment Report 2015 (GAR 15) concludes that the disaster risk management (DRM) need to focus on reducing risk and facilitating sustainable development. GAR15 calls for a new DRM approach that addresses all three elements of disaster risk hazard, vulnerability and exposure - in continuum to manage risks inherent to socio-economic development. This approach is based on applying innovative interventions such as reform risk governance, moving from risk information to risk knowledge, developing a broader approach in cost-benefit analysis of DRM and strengthening accountability.

Throughout Asia and the Pacific, despite progress over the last decade, systematic approaches to incorporating CCA into disaster risk reduction and management are still lacking. Access to national and sub-national level risk information; school-based assessment of hazards, vulnerabilities and capacities towards disasters caused by climate change; planning and implementation of risk reduction measures; learning and practicing of safety measures for emergencies and disasters; and planning for educational continuity, are not taking place on a systematic basis. Nor are the elements that make up local governments able to communicate effectively with one another. The impact of disasters and investments is not yet being documented sufficiently in the context of CCA. Nor are mitigation and preparedness measures being monitored and evaluated at a local level to such an extent where it can be utilized nationally and incorporated into the wider context of regional climate change.

#### Case Study:

This case study displays the need for a clear link between government policy, DRR and CCA to exist, with the help of government offices and NGOs. Since 2007, the Solomon Islands Red Cross (SIRC) has been assisting the Solomon Islands government's environment office to implement its National Adaptation Programme of Action by assisting with vulnerability assessments in communities and contributing to the capacity building component. This component included assisting the college of higher education to develop its course in environmental studies, which incorporated climate change and disaster management modules. Community-based risk

reduction: SIRC has been working with particularly vulnerable communities, who are threatened by hazards such as increased coastal erosion and rising sea levels. It has assisted with the building of traditional sea walls in Temotu Province in the far east of the country. Integrating with training and strategies: SIRC has integrated climate change adaptation within its strategy. Climate change is a part of the volunteer dissemination week, the 'Together for healthy communities' and the "Together becoming resilient" project.

Communications: The climate change and disaster risk reduction officer has been speaking on radio, and works with colleagues to carry out awareness-raising in schools.

Advocacy: SIRC has provided a link between community voices and the development of national climate change adaptation plans, it has also contributed with the government submissions to the United Nations Framework Convention on Climate Change (UNFCCC).<sup>15</sup>

#### 4. POLICY RECOMMENDATIONS

The national governments and their humanitarian and development partners should invest in making disaster resilient communities adaptive to climate change and the participants of the *Asian Ministerial Conference on Disaster Risk Reduction in India* should support the below key elements to be included in the AMCDRR declarations:

- Countries in Asia Region must address disaster and climate risks in development through strengthened governance arrangements in sectors and territories. This

requires a combination of prospective risk management to ensure that risks are appropriately managed in relation to new investments, and corrective risk management in order to reduce the risk in existing capital stock, and efforts to strengthen resilience at all levels.

- National governments should ensure the enabling policies, guidelines and legal frameworks are in place at the national and sub-national level to support the implementation of DRR climate change adaptation framework informed by the national agenda and tailored for local needs.
- National governments commit to improve DRR CCA capacity by taking into account multi-hazard approaches including conflict. They should ensure authorities are prepared for different events by developing a disaster risk reduction plan to effectively implement. An adequate budget should be allocated by 2020.
- National governments commit to build capacity for DRR CCA solutions for what communities should do before, during after disasters. They should encourage local communities, particularly women, to participate in decision-making processes to make their livelihoods safer.
- National governments should ensure local government investments are able to follow national and regional agendas whilst allowing flexibility and integration of DRR CCA at all community levels.



Photo: AIDMI.

**For The Asia Regional Plan**, the following are a range of policy suggestions and it is aimed to call upon the participants of the Asian Ministerial Conference on Disaster Risk Reduction in India to include DRR and CCA in the Asia Regional Implementation Plan as follow:

Priorities for Action	Targets and Indicators
Policy and strategic framework	<ul style="list-style-type: none"> <li>• DRR and CCA need to be properly mainstreamed, it should be supported by a relevant policy. Such a policy needs to set out a broad goal and objectives for mainstreaming DRR and CCA within the organisation and provide a framework for addressing mainstreaming issues through an enabling policy framework. It should receive approval from all national governments which are involved and be disseminated amongst relevant state and local authorities.</li> <li>• General policy statements are important because they give a mandate to authorities and planners to continue promoting and working towards CCA policies from a DRR perspective. Examples such a teachers, communities and volunteers can help to monitor and collect disaggregated data in regards to social vulnerabilities due to climate change.</li> </ul>
Leadership management commitment and support	<ul style="list-style-type: none"> <li>• The commitment and support of authorities of relevant departments are equally important in the long run, since they need to promote the engagement and ownership of their staff and volunteers. Such examples include environment ministries, government departments related to social welfare as well as the disaster management authorities.</li> <li>• The lack of such a commitment and support from authorities (National, State and Local) send a clear signal to their staff that they do not need to apply themselves, even if there is a formal mainstreaming policy they are part of.</li> <li>• Moreover, for a staff member or volunteer, the lack of clear direction can be a major disincentive. Therefore, National governments must consider to guarantee the commitment and support of their leadership and management before they advocate for DRR and CCA mainstreaming.</li> </ul>
Institutional arrangement and capacity	<ul style="list-style-type: none"> <li>• As DRR and CCA are crosscutting issues, the mainstreaming process needs to be owned by all departments, staff and volunteers rather than by a single department or an individual. It is important to anticipate potential barriers to ownership and consider how to address them to ensure that mainstreaming can be considered as an institutional asset rather than a liability. CCA must feature in all DRR policies where relevant and transcend departmental and regional barriers.</li> <li>• As building the ownership of DRR and CCA mainstreaming is a process that will take time, it is helpful for authorities to understand more generally how change can be achieved, and how to manage change. This should be taken at a regional level before being applied to local circumstances. Although mainstreaming should be owned by all, it is necessary to designate an overarching body in order to develop strategies or initiatives, define responsibilities at different levels of the organization, coordinate this multi-sector, multi-tiered engagement, and monitor and evaluate progress.</li> <li>• DRR and CCA focal points should be appointed in technical departments to direct and coordinate sectoral DRR and CCA initiatives. Including the mainstreaming of DRR and CCA into broader programmes, in order to identify and draw on existing DRR and CCA expertise within the department and to provide sector-specific technical support. Appropriate institutional capacity should be put in place to support the mainstreaming process. Various international agencies should assist and monitor the progress in order to ensure that the expert knowledge is fully utilised. This may work in conjunction with agencies such as Asia Pacific Network (APN).</li> <li>• Building the necessary skills and knowledge are crucial to increase staff's understanding and ultimately ownership of the mainstreaming process. Policies and best practices must be understood, implemented and maintained by authorities and national departments. Skills, knowledge and understanding can be developed through senior management briefings, reference materials, training for staff and volunteers, and regular communication between themselves such as joint participation in lessons learnt exercises following major disasters. The assessment of the capacity to understand and address the DRR and CCA mainstreaming issues should be followed by institutional measures to strengthen it and supported by regular monitoring and evaluation. Support of the mainstreaming process should include active advocacy from different stakeholders both private and public.</li> </ul>

<p>Advocacy and Information Sharing</p>	<ul style="list-style-type: none"> <li>• Internal advocacy plays an important part in creating the conditions for mainstreaming DRR and CCA within national framework to give governments a better understanding of disaster and climate-related risks; and it should help them for decisions making in different areas. The role of National Societies as auxiliaries to governments in the humanitarian field gives them a privileged seat in decision-making forums, and the space to raise DRR and CCA issues. This should:</li> <li>• Represent, promote and give visibility at the international and regional level to their work for DRR and CCA;</li> <li>• Influence regional best practice by identifying critical DRR and CCA issues whilst developing and advocating for solutions including institutional, policy, legal and regulatory frameworks;</li> <li>• Encourage information sharing and make an accessible network of information that all participating countries, governments and local authorities can access and use in their local circumstances.</li> </ul>
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***This policy brief is prepared in advance to the Asia Ministerial Conference on Disaster Risk Reduction (AMCDRR), in India, 2-5 November 2016, shows that DRR-CCA requires a flexible national framework to allow for tailored solutions at the local level. It calls for the countries and their humanitarian and development partners to urgently ensure that governments implement a policy of awareness, resilience and information sharing. A future dialogue for authorities to be informed and inform national and regional plans should feature in the Asia Regional Implementation Plans, AMCDRR declaration, and disaster management plans and policies, and collect better data to monitor the progresses.***