Regional Cooperation on Climate Change Adaptation and Disaster Risk Reduction in South Asia

Road Map

SAARC Workshop on
Climate Change and Disasters:
Emerging Trends and Future Strategies

Kathmandu, Nepal
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Introduction

1.1 South Asia, the home for one-fifth of the humanity, has perennially been a disaster-prone region. Two thirds of the disasters the region experiences are climate related and there have been phenomenal increase in their frequency, severity and unpredictability in the recent times. The severest impacts have been visualized in terms of sea level rise leading to submergence of low-lying coastal areas and depletion of Himalayan glaciers threatening the perennial rivers that sustained food, water, energy and environment security of the region. The climate change is surely creating grounds for newer and more severe risks of disasters in the region in the coming years.

1.2. Further, layers of vulnerabilities in the region – poverty, illiteracy, mal-nutrition and social inequities - are aggravating the risks from stresses on water, agriculture and environment and creating recipes of more disasters. With climate sensitive agrarian economies, all the countries of the region would be facing serious crisis unless the rising temperature of the globe and the region are checked and new technologies, practices and life styles are developed and adapted according to the changing climate scenarios. Therefore, climate change mitigation and adaptation have emerged as important tools for disaster risk reduction for all the countries in the region.

1.3. So far climate change and disaster management communities of the region have been working in relative isolation, with the former focusing more on long term modeling and projections of climate scenarios and their possible impacts and the later concentrating on short term preparedness and response to disaster events. The time has come when the implications of future climate projections for the current risks and vulnerabilities are understood and accordingly these are factored into the policies and programmes developed for reducing the risks of disasters. Surely there should be greater dialogue and

interaction between the two communities so that the limited efforts for climate change analysis and adaptation and disaster risk reduction in the region can be integrated to the extent this possible and new innovative tools and methodologies developed for such integration in development projects and practices. Although, efforts to bring together stakeholders in climate change and disaster management have begun to create an opportunity for integration, challenges would lie not only in harmonizing diverse institutional structures and distinct sectoral planning and policies etc but also in translating the common grounds into projects on the grounds.

1.4 Increasing trends of natural disasters and their threatening impacts on lives and livelihoods have resulted in a paradigm shift in disaster management in all the countries of South Asia - from one post disaster relief and rehabilitation to holistic management of management of disasters covering all phases of disasters. The focus is clearly on Disaster Risk Reduction (DRR) - preparedness, mitigation and prevention. Many of the risk reduction measures particularly those related to hydro-meteorological disasters, such as drought proofing, flood protection, saline embankment and bio-shields, alternative livelihood development etc have similarities with Climate Change Adaptation (CCA) programmes. Therefore synergies between DRR and CCA would be necessary not only to avoid duplicities and derive optimal benefits from scarce resources but also to add value to the projects through lessons learnt from the respective perspectives.

1.5 Factoring climate change issues in disaster risk mitigation projects would enrich the projects and make them more relevant to the emerging concerns just as risk management tools would assess climate change from the perspectives of risks and vulnerabilities over time and the cost-benefit of alternative strategies of adaptation. The *SAARC Workshop on Climate Change and Disasters: Emerging Trends and Future Strategies* makes a modest beginning in this direction to develop a road map for the future.

Global Efforts

2.1. At global level, the *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters* adopted at the World Conference on Disaster Reduction in Kobe Japan lays emphasis on scaling up the use of disaster risk reduction tools viz., vulnerability and risk assessments, early warning systems, land-use planning, techno-legal regime for development practices, besides enhancing the institutional and legal capacities. The focus has also been placed on the integration of knowledge on disaster risk reduction and application of such knowledge to bridge the gaps in management of disaster risks. Each of these action areas can have significant bearings in climate sensitive sectors.

2.2 The United Nations Framework Convention on Climate Change (UNFCC) recognized that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The Convention adopted the Kyoto Protocol in the third conference of parties in Kyoto Japan in 1997 which commits the developed countries to stabilize greenhouse gases and provide a tool for such stabilization through the promotion of Clean Development Mechanisms in the developing countries. In the second most important initiative after Kyoto Protocol, the Convention adopted the Bali Action Plan in December 2007 which calls for enhanced action on adaptation, considering in particular risk management and risk reduction strategies, including risk sharing and transfer mechanisms such as insurance and other disaster reduction strategies. For the first time ever disaster risk reduction was included as a tool for climate change adaptation, which will guide the negotiations for a post Kyoto climate change agreement from 2012, This has opened up a range of possibilities for integration of climate change adaptation in disaster risk reduction strategies.

Regional Efforts

3.1 The need for regional cooperation addressing the concerns for environmental degradation in South Asia was voiced way back in

1987 during the Third SAARC Summit. The trans-boundary linkages of natural disasters with environment in the region were recognized for regional cooperation. The SAARC initiated a 'Regional Study on the Causes and Consequences of Natural Disasters and the Protection and Preservation of Environment' in 1991 and another study on 'Greenhouse Effect and its Impact on the Region' in 1992, which recommended regional measures in sharing experiences, scientific capabilities and information on climate change, sea level rise, technology transfer etc. As a follow-up to these studies, SAARC Plan of Action on Environment was adopted in 1997. The Action Plan provided for the establishment of Regional Centers of Excellence. The SAARC Meteorology Research Centre (SMRC) was established in Dhaka in 1995; the SAARC Coastal Zone Management Centre (SCZMC) was set up in Male in 2004; SAARC Disaster Management Centre (SDMC) came up in New Delhi in 2007 and the SAARC Forestry Center has come into the existence in Bhutan recently. All these SAARC Regional Centres can provide credible institutional support for taking up climate change and disaster risk reduction issues in the region.

3.2. The Fourteenth SAARC Summit held in New Delhi in 2007 expressed 'deep concern' over the global climate change and called for pursuing a climate resilient development in South Asia. The member countries pledged for immediate collective action and stronger regional co-operation for the conservation and utilization of SAARC shared resources towards addressing the negatives of climate change. Further, the SAARC Council of Ministers, at their Twenty-ninth Session held in New Delhi in December 2007, adopted the SAARC Declaration on Climate Change which reflects the collective vision of South Asia. On behalf of the SAARC H.E. the President of Maldives presented the Declaration in the UNFCC meeting at Bali in December 2007.

3.3 The SAARC Ministerial Meeting on Climate Change held on July 3, 2008 in Dhaka adopted the SAARC Action Plan on Climate Change. H.E. Dr Sheel Kant Sharma, the SAARC Secretary General, in his inaugural speech laid emphasis on intensifying the regional

cooperation on climate change adaptation. He also highlighted that the emphasis of SAARC is to move from a declaratory to implementation phase and highlighted the roles that SAARC Regional Centres could play therein. He called upon the SAARC Meteorological Research Centre, the SAARC Coastal Zone Management Centre, SAARC Disaster Management Centre and SAARC Forestry Centre to contribute synergistically with their respective mandates in enhancing the SAARC climate change resilience by pursuing SAARC Action Plan on Climate Change.

3.5 The 15th Summit Meeting of Heads of States or Governments of SAARC countries held in Colombo on 2-3 August, 2008 has endorsed the SAARC Action Plan and Declaration on Climate Change adopted by the Environment Ministers at Dhaka on 3rd July, 2008.

3.6 The SAARC Action Plan on Climate Change stresses that the primary responsibility of implementing the Action Plan, proposed for an initial period of three years, rests with the National Governments. With regard to the regional cooperation, the Action Plan envisages that a mechanism should be agreed upon to effectively use the existing institutional arrangements of SAARC by giving clear directions and guidance.

3.7. SAARC Disaster Management Centre (SDMC) attaches a very high priority on implementing the SAARC Action Plan on Climate Change. In fact, SDMC, in its strategy to evolve the road maps on various themes, has taken into account the integration of disaster risk reduction into climate change adaptation as one of its priority areas of action. The SAARC Workshops on Science & Technology Applications in Disaster Risk Reduction in January 2008 in New Delhi and Coastal and Marine Risks in May 2008 in Goa emphasized on exchange of information and research on the linkages between climate change adaptation and disaster risk reduction in the region.

National Efforts – Emerging Trends

4.1. While there are efforts in South Asian countries to directly address climate change adaptation issues, through the development of National Adaptation Plans of Action (NAPAs), National Action Plan for Climate Change, their integration to disaster risk reduction need specific priority. In order to address adaptation concerns as part of their national development plans, the explicit focus on disaster risk is seen only in few cases. For example, the Safe Island programme of Maldives is an integrated effort on addressing vulnerability through strategic planning for climate change adaptation. Similarly, coastal zone management efforts in India, Pakistan and Sri Lanka are yet another example in this direction.

4.2. Except few cases in the arena of coastal zone management and also in case of integrated watershed development programmes, there is a clear disconnect between the institutional and legislative systems developed to address disaster risk and those developed to address climate change. The emphasis is to be laid on climate-related development outcomes – in areas such as agriculture, water resources, food security, health, the environment and livelihoods – that are sensitive to both climate variability and change.

4.3 In South Asia where both climate-related hazard and vulnerability levels are likely to be drastically affected by climate change, it is necessary, based on the regional cooperation among South Asian countries, to establish systematic integration between the institutional frameworks, policies and strategies to address disaster risk with those related to adaptation to climate change. A key challenge, in this context, is to strengthen regional capacities to manage and reduce risks associated with existing climate variability. To achieve this, closer linkages need to be forged between the policy arenas of climate change and disaster risk reduction, at national, regional and international levels.

4.4 Further, at global level, the implementation of the Hyogo Framework needs to be more clearly recognized as a primary tool to

achieve the adaptation goals of the UN Framework Convention on Climate Change (UNFCCC). The reflection of such integration assumes greater importance and urgency in the climate risk hotspot of South Asia through regional cooperation under the SAARC Framework of Disaster Management.

SAARC Regional Workshop on Climate Change and Disasters : Key Findings and Recommendations

5.1. With the above background, the SAARC Workshop on Climate Change and Disasters: Emerging Trends and Future Possibilities during 21-22 August 2008 at Kathmandu, Nepal was planned with the following objectives:

- to capture the recent trends of climate change scenarios including scientific & operational issues as well as challenges in South Asian region;
- to highlight the on-going efforts on climate change adaptation and disaster risk reduction as well as their integration at various levels;
- to explore the possibilities of regional cooperation for capacity building in addressing the issues related to climate change adaptation and disaster risk reduction and also to discuss the conceptual DRR-CCA integration framework and the suggested recommendations therein for further follow-ups;
- to prepare a roadmap on strengthening the regional capacity as well discussing the role of SDMC in support of SAARC Action Plan on Climate Change.

The major highlights of key findings and recommendations on integrating Disaster Risk Reduction in Climate Change Adaptation are summarized below:

5.2. Integration of Disaster Risk Reduction (DRR) into Climate Change Adaptation (CCA) would be one of the challenges of risk management in South Asia. The task can be addressed by identifying those areas which create divergence between DRR and CCA

processes, as also those which create convergence between the two. The forces that create divergence are the following:

a) **Diverse Institutional Structure:** The institutional arrangements that exist in South Asian countries are such that DRR and CCA experts and functionaries are usually different, respond to different needs and to the different constituencies and do not have authority to implement policy decisions in the areas other than their specific responsibilities. In fact, such structural barriers also exist at international and regional levels.

b) **Disconnected Policies, Planning and Programmes:** DRR and CAA policies, planning and programmes often take place in isolation without sharing the respective goals, methodologies and objectives.

c) **Lack of Relevant Information:** Information concerned with DRR and CCA are inherently complex which can not be packaged easily for integration into respective concerns. DRR related info, for example, often does not describe environmental and socio-economic information of underlying risk factors which are required in support of pursuing CCA.

d) Ad-hoc Short-term Approaches: For most of DRR projects, risks to investments are not considered for the full life-time of the project and thus ignores climate change risks, impact and adaptation factors.

5.3. The convergence between DRR and CCA processes has been observed in certain types of projects which need to be recognized for scaling-up and replications in the region, especially through regional cooperation. These are:

a) Integrated Coastal Zone Management

b) Participatory Watershed Development Programme

c) Land Use Planning in areas sensitive to climate and disaster risks

d) River-basin Floodplain Management

e) Integrated Drought Mitigation

5.4. The tools and techniques used for DRR such as early warning systems, hazard, risk and vulnerability analysis, risk assessment and monitoring, risk mitigation as well as response strategies need to be integrated with CCA strategies in the critical sectors like human health, food, water and environmental security, agriculture, forestry, tourism, etc. There are success stories and good practices demonstrating such integration, which should be replicated and further scaled up.

5.6. There are enabling mechanisms for integrating DRR and CCA through integration of appropriate technologies like ICTs, Space, Automatic Weather Stations (AWS), Doppler Weather Radars (DWR) etc. Similarly, networking of DRR and CCA institutions at national, regional and global levels coupled with multi-stakeholder communication and dialogues as well as exchange of information and expertise may catalyze such integration.

5.7. From the 'conceptual framework' as outlines above to 'actionable strategies', the following steps are suggested:

Step I: Targeting Climate Related Disaster Risks: Most of the Hazard, Vulnerability and Risk (HVR) Assessment efforts are based on the frequency of occurrence of disasters in spatial and temporal domains. Climate risks are not captured well and also the simulated climate change scenarios are not factorized to target the climate related disaster risks especially in the 'hotspots' of South Asian region. While the strategy calls for recasting HVR mapping efforts, such efforts enable closer integration of DRR and CCA in the operational domain of end-to-end project implementation.

Step II: Designing Risk Reduction Strategies: Designing Risk Reduction Strategies for hydro-meteorological risks must essentially be based on using the knowledge of climate risks. For instance, if it is to develop an effective and people's centred EWS to provide 'actionable' information about a climate hazard to a vulnerable population, the assessment of climate risk should form the key inputs. Further, the strategies must be dynamic and in tune with the changing practices and conditions such as depletion of the ecological foundation of the natural

resources such as coral reefs and mangrove forests may aggravate risks; further effective insurance and micro-finance initiatives to transfer risks and provide additional resources may reduce risks.

Step III: Integrating Climate, Weather & EWS Information in Decision Making; Besides implanting DRR in CCA projects, it is important to utilize advanced climate forecast information in managing risks from the existing climate variability and also utilize results from climate change models especially where known climate change impacts lead to a certain direction viz., glaciers retreat and GLOF in Himalayan region.

5.8. As climate hazards are growing in number, more and more people in the region are turning vulnerable because of poverty, powerlessness, population growth, and the movement of people to marginal areas. Climate change has the potential to derail the poverty alleviation efforts in the region, punishing first and most, the very people least responsible for greenhouse-gas emissions – and increasing their vulnerability to the natural disasters further. Concerted national efforts are necessary in support of climate change adaptation and disaster risk reduction.

5.9. Uniquely, with the inherited traditional knowledge, South Asia has got the civilizational heritage in terms of indigenous coping and community resilience. These heritages need further empowerment in terms of technology and knowledge to withstand the potential climatic shocks and their extremes. Further, with the growing climate risk, the adaptive capacity in South Asia is to be enhanced by providing the necessary financial resources, access to technology and knowledge, and by enhancing the institutional capacity. For example, the capital-intensive agricultural systems are less sensitive to climate, perhaps because they can control so many more inputs. Agriculture, water management, land use practices etc in South Asia are therefore to harmonize with changing climate regimes.

Thematic Areas for Road Map

6.1. In order to evolve the roadmap, the workshop discussed the following thematic areas of the Regional Action Plan on Climate Change on which SDMC was expected to play its role in promoting action for national action and regional cooperation.

Thematic area one: Adaptation to Climate Change

- Adaptation to climate change impacts and risks in vulnerable communities, locations and ecosystems,
- Adaptation in sectors (e.g. water, agriculture, fisheries, health and biodiversity)
- Adaptation to extreme climate events (e.g. flood, cyclone, glacial lake outburst, droughts and heat and cold waves)
- Adaptation to climate change impact (e.g. sea level rise, salinity intrusion, glacial melt and coastal and soil erosion,)
- Adaptation suited to urban settlements, coastal structures and mountain terrain

Thematic area Six: Management of impacts and risks due to climate Change

- Climate risk modeling and capacity building in the region on impact assessment of climate change.
- Sharing of information and capacity building in the management of climate change impacts and risks through cooperation among SAARC member states in early forecasting, warning and adaptation measures,
- Cooperation amongst the SAARC member states in exchange of information on climate and climate change impacts (e.g. sea level rise, glacial melts, droughts, floods, etc.).
- Cooperation and sharing of good practices in disaster management

Priority Action Plan

• Exchange of information on disaster preparedness and extreme events
• Capacity building and exchange of information on climate change impacts (e.g. Sea level rise, glacial melting, biodiversity and forestry).

Road Map for Implementation of SAARC Action Plan on Climate Change by SAARC Disaster Management Centre (2009 – 2011)

7.1 The workshop acknowledged that the SAARC Regional Centres on Meteorology, Agriculture, Health, Forestry, Coastal Zone Management etc., shall develop their own strategies and road maps for implementation of their Action Plan in the respective areas of operation. In so far as SDMC is concerned the Workshop recommends the following strategies and road map for the implementation of the Action Plan.

i) Thematic area one: **Adaptation to Climate Change**

The experiences gained and lessons learnt from the existing and past initiatives on Disaster Risk Reduction (DRR) in the different countries of the region should be systematically integrated with Climate Variability/Climate Change Adaptation (CCA) projects and vice versa. The Centre shall formulate appropriate process and programme guidelines for integration of DRR in CCA projects and vice versa in respect of four natural disasters namely, floods, cyclones including saline intrusion, droughts and glacial lake outbursts for the guidance of the Member States.

ii) Thematic area three: **Technology Transfer**

SDMC shall develop a Concept Paper on technology need assessment for integrating adaptation to climate variability

and change into disaster risk reduction, especially those related to Early Warning Systems for drought and flood and submit the same to the National Governments and other relevant SAARC Regional Centres for their consideration.

iv) Thematic area four: **Finance and Investment**

SAARC Disaster Management Centre shall study the potential application of Micro-credit, Micro-insurance and Crop Insurance for climate change adaptation in selected climate risk hotspots of the region.

v) Thematic area five: **Education and Awareness**

SAARC Disaster Management Centre shall develop tool kits on Climate Risks and Disasters for education and awareness of the people of the region.

vi) Thematic area six: **Management of Impact and Risks due to Climate Change**

SDMC in collaboration with all relevant institutions shall develop Training Modules on Climate Risk Assessment relevant to the contexts of the South Asia region and conduct regional training programme for capacity building on climate risk assessment.

The Centre shall develop a South Asia Disaster Knowledge Network to enhance cooperation amongst the SAARC Member States in exchange of information on the impacts and risks due to climate change and document Good Practices on Climate Change Adaptation and Disaster Risk Reduction in South Asian region.

7.2 **Implementation of Road Map:** SDMC shall draw up a detailed programme of activities and submit the same to the Governing Board of the Centre for its consideration. The approved

Road Map shall be implemented during 2009-11. The implementation of the Road Map shall be closely monitored and a bi-annual report submitted to the Secretary General of the SAARC.