Mainstreaming Disaster Risk Reduction into Development in the SAARC Region: Need for Integration of DRR into Development Activities and Strengthen Knowledge Management

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#### Abstract

The SAARC Region is highly susceptible to all types of natural and human induced disasters. Climate Change, pollution and environmental degradation are further compounding the problems in the region. Governance plays a very important role in Disaster Risk Reduction (DRR). Mainstreaming Disaster Risk Reduction (MDRR) into development activities should be an underlying principle in all development sectors of the member countries for an effective DRR strategy in the SAARC Region. Good Governance and DRR are mutually supportive and complementary. Principles of Good Governance such as broad participation, openness, transparency, accountability, efficiency and responsiveness are as important for DRR as they are for development at large. Mainstreaming DRR should be a governance process enabling the systematic integration of DRR concerns into all development spheres in the SAARC region.

DRR requires knowledge for informed decision making and coordinated action. Although the knowledge production and implementation processes are critical for DRR, these issues are seldom systematically addressed in-depth in South Asia. While efforts and improvements have been made with regards to data and information, only limited resources are committed to improving knowledge management structures and integrating knowledge systems at different spatial levels in most parts of South Asia. The Sendai Framework for Disaster Risk Reduction (SFDRR) addresses these knowledge-related issues and highlight the importance of promoting the collection, analysis, management, and use of relevant data and practical information at national and local levels as well as to ensure its dissemination, taking into account the needs of different categories of users.

This paper briefly discusses the importance of Knowledge Management in Disaster Risk Reduction and the need for Mainstreaming DRR into development and strengthening governance and provide a framework, mechanisms & strategies for strengthening Knowledge Management in DRR to ensure a safe and disaster resilient South Asia.

(Key Words: Good Governance, Mainstreaming Disaster Risk Reduction, SFDRR, Disaster Resilience, Climate Change, Pollution & Environmental Degradation)

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# 1. Introduction

The SAARC Region consisting of the member countries of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka is one of the most disaster-prone regions in the world. The region is highly susceptible to all types of natural and human induced disasters. Climate Change, pollution and environmental degradation is further compounding the problem in the region. The SAARC region should undertake Climate Change Adaptation measures in a large scale.

Governance plays a very important role in Disaster Risk Reduction (DRR) in the SAARC Region. Mainstreaming Disaster Risk Reduction (MDRR) into development activities should be an underlying principle in all relevant development sectors of the government in the SAARC Region. DRR requires knowledge for informed decision making and coordinated action.

In the SAARC region, Knowledge Management is very critical for reducing disaster risks. Although the knowledge production and implementation processes are critical for DRR, these issues are seldom systematically addressed in-depth in South Asia. While efforts and improvements have been made with regards to data and information, only limited resources are committed to improving knowledge management structures and integrating knowledge systems at different spatial levels in most parts of South Asia. The Sendai Framework for Disaster Risk Reduction (SFDRR) addresses these knowledge-related issues and highlight the importance of promoting the collection, analysis, management, and use of relevant data and practical information at national and local levels as well as to ensure its dissemination, taking into account the needs of different categories of users.

#### 2. Good Governance and Disaster Risk Reduction (DRR):

Good Governance and DRR are mutually supportive and complementary. A central criterion of Good Governance namely, the principle of ensuring that the voices of the poorest and the most vulnerable are heard in decisions about the allocation of resources affecting them is essential for effective DRR and sustainable disaster recovery. Responsive, accountable, transparent and efficient governance structures underwrite the environment where DRR can be institutionalized as an underlying principle of sustainable development. Important principles of Good Governance such as openness, broad participation, transparency, accountability, efficiency and responsiveness are as important for DRR as they are for development at large.

## 3. Mainstreaming Disaster Risk Reduction (MDRR) into Development in South Asia

Mainstreaming is defined as the systematic consideration of the differences between the different conditions, situations and needs of disadvantaged groups in all policies, at the point of planning, implementation and evaluation (UNISDR). Mainstreaming therefore, should aim to ensure that opportunities are genuinely available and accessible to the spectrum of potential service users and that current initiatives do not have a negative impact on disaster affected groups. It may also provide certain features and arrangements that allow people access to and participate in their environment in certain situations or circumstances and in reaction to a stated need. Mainstreaming entails considering and addressing risks emanating from natural and manmade hazards in the development policies, plans, strategies and programs. There could be certain important steps that represent the main milestones within the mainstreaming process. These may include analysis of a given situation, creating awareness on disaster resilience, identification of feasible measures which reduce impacts of disasters etc.

A basic principle of mainstreaming disaster risk reduction into development is the systematic consideration of the differences between non-disaster (i.e., normal) and disaster (i.e., emergency) conditions, situations, and needs of affected population in the various policies, programmes and activities of the government. Mainstreaming of DRR should be a governance process enabling the systematic integration of DRR concerns into all relevant development spheres. Development and the achievement of the Millennium Development Goals (MDGs) are limited by frequent disasters in South Asia and many studies have shown the benefits of disaster resilience measures both in economic and social terms. Without the integration of disaster risk reduction into all aspects of development, sustainable development cannot be achieved in the SAARC region. Hence, there is an urgent need to mainstream DRR and integrate DRR into all the development activities in the SAARC region. There are several ways for achieving this. Measures related to poverty alleviation, ending hunger, ensuring healthy lives, education, sustainable management of water, building resilient infrastructure, resilient cities, climate change and marine and terrestrial ecosystems etc. all contribute to disaster risk reduction. The focus on implementation provides an opportunity to encourage increased political commitment and economic investment to reduce risks and take development action that considers disaster resilience as critical to poverty reduction and key enabler of sustainable development in South Asia.

### 4. Knowledge Management in Disaster Risk Reduction

Knowledge Management refers to the process of enhancing the performance by designing and implementing the tools, processes, systems, structures and cultures to improve the creation, sharing and use of Knowledge. Knowledge Management facilitates the creation and subsequent management of an environment which encourages Knowledge to be created, shared, learnt, enhanced, organized and utilized. Knowledge is created by accumulating and organizing information. Facts, data, and information are necessary mediums for eliciting and constructing knowledge. While information is static, knowledge is dynamic, built through social interaction and experience, with the result that the objective facts, data, and information are considered and evaluated from different perspectives. Knowledge management efforts focus on improved performance, innovation, sharing of lessons learned, integration and continuous improvement.

Many people think that that knowledge management is about capturing best practices and experiences people have and store it in a database with a hope that it will be useful later. In fact, this is not true and many of us spend more than ten percent of our time in searching for a piece of information we know resides somewhere. Knowledge management is all about getting the right knowledge, in the right place, at the right time. In a broader context, information about disaster preparedness, dos' and don'ts in emergency, disaster management plans, policies and guidelines are available at various domains at various places, institutions and organizations from decades. However, millions of people are getting severely affected by disasters every year due to lack of adequate knowledge regarding coping mechanisms. Hence, utmost importance must be attached to Knowledge Management in Disaster Risk Reduction.

As a strategic approach to achieving disaster management objectives, Knowledge management will play a valuable role in leveraging existing knowledge and converting new knowledge into action. Further research and development in the subject areas of information and knowledge management technology and related domains are needed to formulate effective disaster management strategies and systems.

The SAARC member countries do not systematically collect disaster-related facts, data, and information. Depending on the agency or institution, the collection ranges from hazard type to risk exposure and disaster damage. Thus, knowledge is scattered among various actors

and arenas in South Asia with limited coherence, coordination, and sharing. Hardly any resources are committed to specific efforts to improve knowledge management in DRR in the SAARC region. The data collected and information are usually not properly organized for different audiences and translated into different languages. While closer cooperation between academics and practitioners in making data available for research purposes is desirable, the common practice is that datasets are not shared but guarded by secrecy and nondisclosure agreements. Even when datasets are freely accessible, they often remain empirical, unstructured, and meaningless facts. As a result, although risk information is being generated and disseminated on a large scale, we do not know how far it reaches to those who needed it the most and whether it changes risk perceptions and awareness levels. In the DRR domain, a drawback is the lack of agreed standards and clearly defined responsibilities and accountabilities in knowledge management.

The linkages among all agencies working on disaster management need to be strengthened in order to derive the regional best practices and coping mechanisms. In order to enhance the information sharing and management of the knowledge generated in these institutions, it is highly essential to closely knit the organizations/ institutions and moreover people. The network of these institutions will create a common platform and enable its stake holders and people to capture, organize, share and reuse the knowledge generated in the area of disaster management.

Disaster risk reduction policy and practice require knowledge for informed decision making and coordinated action. Although the knowledge production and implementation processes are critical for disaster risk reduction, these issues are seldom systematically addressed in-depth in disaster studies and policy programs in the SAARC region. While efforts and improvements have been made regarding data and information, only limited resources are committed to improving knowledge management structures and integrating knowledge systems at different spatial levels in South Asia. The Sendai Framework for Disaster Risk Reduction (SFDRR, 2015–2030) also addresses knowledge-related issues and highlight the importance of promoting the collection, analysis, management, and use of relevant data and practical information at national, regional and local levels as well as to ensure its dissemination, taking into account the needs of different categories of users.

# 5. The Sendai Framework for Disaster Risk Reduction and Knowledge Management Prof. M.B.Rao: MDRR in the SAARC-Need for Strengthen KM

The Sendai Framework for Disaster Risk Reduction (SFDDR) takes into account that decision making and coordinated action require reliable knowledge. It's implementation is guided by several principles, and Paragraph 19 directly refers to knowledge: "Disaster risk reduction requires a multi-hazard approach and inclusive risk-informed decision-making based on

the open exchange and dissemination of disaggregated data, including by sex, age and disability, as well as on the easily accessible, up-to-date, comprehensible, science-based, non-sensitive risk information, complemented by traditional knowledge" (UNISDR <u>2015b</u>, p. 9). While this statement seems straightforward at first glance, the problem of who should collect, disaggregate, and disseminate the data is less so.

The SFDRR sets four priorities for action: (1) understanding disaster risk; (2) strengthening disaster risk governance to manage disaster risk; (3) investing in disaster risk reduction for resilience; and (4) enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation, and reconstruction. SFDRR priority 1 relates to issues of knowledge, listing 23 requirements that are directly or indirectly linked to information and knowledge. For instance, point (h) advises to "promote and improve dialogue and cooperation among scientific and technological communities, other relevant stakeholders and policymakers in order to facilitate a science-policy interface for effective decision-making in disaster risk management" (UNISDR 2015b, p. 11). An effective implementation of this advice, however, requires a certain understanding of knowledge production processes, of the existence of different types of knowledge, and of the causes hindering the transfer and use of information.

The SFDRR also highlights the importance of promoting "the collection, analysis, management, and use of relevant data and practical information" at national and local levels, as well as to "ensure its dissemination, taking into account the needs of different categories of users". This is reasonable since many countries do not systematically collect disaster-related facts, data, and information. Collected data and information are usually not organized for different audiences and translated into different languages. Depending on the agency or institution, the collection of data ranges from hazard type to risk exposure and disaster damage. Thus, knowledge is scattered among various actors and arenas with limited coherence, coordination, and sharing. The existence of a national or state web site that displays disaster-

related data is not evidence for the existence of a national disaster information system. More importantly, there is hardly any reassessment and evaluation of collected and used data and information. Learning includes the processes of generating, acquiring, and sharing knowledge, as well as incorporating the newly acquired knowledge into future activities.

#### 6. Collaboration, Coordination and Cooperation for DRR in the SAARC Region

Strengthening and improving early-warning systems and providing last mile connectivity are vital to building disaster resilience in the SAARC region. This requires a lot of collaboration, coordination and cooperation among various organizations and institutions in the region. In the SAARC region, substantial progress has been achieved in understanding the cause and effects of natural hazards. Science and Technology have brought a deeper understanding of disaster risks and lot of knowledge and information on how to reduce them is available in the domain of Science and Technology organizations and institutions in the region. But there is a lack of coordination and cooperation among various organizations and institutions, though they are operating in the same domain fields.

The SAARC was established on December 1985 with the objectives to promote the welfare of the people of South Asia and to improve their quality of life, to accelerate economic growth, social progress and cultural development in the entire region. The SAARC strives to promote and strengthen collective self-reliance among the countries of South Asia, to contribute to mutual trust, understanding and appreciation of one another's problems, to promote active collaboration and mutual assistance in the economic, social, cultural, technical and scientific fields, to strengthen cooperation with other developing countries, to strengthen cooperation among themselves in international forums on matters of common interests and to cooperate with international and regional organizations with similar aims and purposes. Though there is so much common with every member country of the SAARC region in terms of culture, traditions, history and common beliefs, there is widespread diversity in terms of climatic, geographical, meteorological, hydrological and socio-economic conditions in the region. During the initial period i.e., during the late eighties and early nineties of the twentieth century, the SAARC achieved considerable success and developed as a coherent regional organization

and enjoyed active collaboration and mutual assistance, cooperation and coordination from the Member Countries in the economic, social, cultural, technical and scientific fields. But over the recent years, there appears to be certain blockades for effective performance and functioning of the SAARC. during the last few years, the SAARC summits are not being held regularly. The last SAARC summit (eighteenth summit) was held on November, 2014 and since then, no summit was held so far.

In the SAARC region, there exists a wealth of scientific, technical knowledge, information and engineering know-how that could be effectively used to reduce disaster impacts. Since there is no collaboration and cooperation in the region, there are gaps in passing this knowledge and information to the needy to take appropriate action and for integrating this for implementing disaster resilience and sustainable development programmes. Hence, the member countries of the SAARC region should pay special attention to address these issues.

#### 7. Conclusion

There is a conscious effort for Disaster Risk Reduction at national, provincial and sub-provincial level in most parts of South Asia. However, there is a felt gap in information coordination and sharing. The knowledge and experiences gained by disaster practitioners are remaining in individual or institutional domain. Hence, there is an urgent need for strengthening and improving Knowledge Management efforts in South Asia and providing for a common platform to capture, organize, use and share this knowledge.

Governance plays a very important role in Disaster Risk Reduction (DRR). Good Governance and DRR are mutually supportive and complementary. Mainstreaming Disaster Risk Reduction (MDRR) into development activities should be an underlying principle in all development sectors of the member countries for an effective DRR strategy in the SAARC Region. With the Sendai Framework's greater emphasis on Knowledge Management and improving Governance systems for reducing disaster risks and further strengthen disaster resilience and sustainable development, there is a significant need to share knowledge and resources and disseminate disaster risk reduction and resilience methodologies and tools. Through effective regional collaborative strategies and cooperation mechanisms, by the active involvement of various Organizations and Institutions, with the continued political commitment and support from the governments of the region, it is quite possible to face all the challenges of disaster risk reduction to ensure a safe and disaster resilient South Asia.

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#### 1. References:

- 1. AMCDRR (Asian Ministerial Conference for Disaster Risk Reduction). 2014. Statement of voluntary commitments of Asia Science, Technology and Academia Stakeholder Group for the 6th Asian Ministerial Conference for Disaster Risk Reduction, Annex 10, Bangkok.
- 2. ASTAAG (Asia Science Technology and Academia Advisory Group). 2015. Strategy paper for Asia Science Technology and Academia Advisory Group, UNISDR Strategy and TOR, Beijing. Google Scholar
- 3. Calkins, J. 2015. Moving forward after Sendai: How countries want to use science, evidence and technology for disaster risk reduction. *PLOS Currents Disasters*. doi:10.1371/currents.dis.22247d6293d4109d09794890bcda1878.Google Scholar
- 4. Dickinson, C., A. Aitsi-Selmi, P. Basabe, C. Wannous, and V. Murray. 2016. Global community of disaster risk reduction scientists and decision makers endorse a science and technology partnership to support the implementation of the Sendai framework for disaster risk reduction 2015–2030. *International Journal of Disaster Risk Science* 7(1): 108–109.
- 5. Government of India, Ministry of Home Affairs, NDM Division, Disaster Risk Reduction: The Indian Model, 2005, New Delhi
- 6. Government of India, Department of Administrative Reforms and Public Grievances, Second Administrative Reforms Commission, Third Report on Crisis Management: From Despair to Hope, September 2006, New Delhi
- 7. Government of India, Vulnerability Atlas of India, 1999 Ministry of Urban Development, Building Materials and Technology Promotion Council, New Delhi
- 8. Government of India, Ministry of Agriculture, High Powered Committee (HPC) Report 2001.
- 9. IDRC (International Disaster and Risk Conference). 2014. Integrative disaster risk management: The role of science technology and practice. IDRC Davos 2014 outcomes report. https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent? documentId=09000016800c7356. Accessed 5 Dec 2016.
- 10. Kameda, H. 2009. Implementation technology for disaster reduction. In *Disaster management: Global challenges and local solutions*, ed. R. Shaw and R. Krishnamurthy, 206–219. Hyderabad, India: Universities Press. <u>Google Scholar</u>

- 11. Parker, M. 2013. Making the most of scientists and engineers in government. In *Future directions for scientific advice in Whitehall*, ed. R. Doubleday and J. Wilsdon, 49–60. Sussex, UK: University of Sussex. Google
- 12. Science Council of Japan, UNISDR (United Nations International Strategy for Disaster Reduction), IRDR (Integrated Research on Disaster Risks), and University of Tokyo. 2015. Tokyo statement: Towards a new science and technology to consolidate disaster risk reduction and sustainable development. Tokyo, Japan: Science Council of Japan, UNISDR, IRDR, and University of Tokyo.
- 13. Shaw, R., T. Izumi, P. Shi, L. Lu, S. Yang, and Q. Ye. 2016. *Asia science technology status for disaster risk reduction*. Beijing, China: IRDR, Future Earth, and ASTAAG. <u>Google Scholar</u>
- 14. STAG (Science and Technology Advisory Group). 2015. Science is used for disaster risk reduction: UNISDR Science and Technology Advisory Group Report. (<a href="http://www.unisdr.org/we/inform/publications/42848/">http://www.unisdr.org/we/inform/publications/42848/</a>
- 15. Disaster Risk Management in South Asia: A Regional Overview–Washington, DC: The World Bank: GFDRR, 2012.
- 16. United Nations Office for Disaster Risk Reduction (UNISDR) and World Meteorological Organization. May 2012.( <a href="http://www.un.org/en/development/desa/policy/untaskteam\_undf/thinkpieces">http://www.un.org/en/development/desa/policy/untaskteam\_undf/thinkpieces</a> /3\_disaster\_risk\_resilie nce.pdf )
- 17. United Nations Office for Disaster Risk Reduction (UNISDR), 2014. Contribution to the 2014 United Nations Economic and Social Council (ECOSOC) Integration Segment http://www.un.org/en/ecosoc/integration/pdf/unisdr.pdf i Overseas Development ODI, October 2013, The geography of poverty, disasters and climate extremes in 2030. (http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8633.pdf)
- 18. United States Environmental Protection Agency website (http://www.epa.gov/climatechange/impactsadaptation/agriculture-adaptation.html)