Integration of Disaster Risk Reduction and Climate Change Adaptation in SAARC region









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INTRODUCTION AND BACKGROUND

- SAARC, Region gets affected with a multitude of climate related hazards i.e. cyclones, floods, drought, extreme temperature, storm surges and Glacial Lake Outburst Floods (GLOFs).
- There are a number of disaster risk hotspots in the region and it is expected that existing risk patterns will intensify as a result of climate change.
- This unprecedented increase is expected to have severe impact on the hydrological cycle, Glaciers / mountainous area, water resource (drought, flood, drinking water, forest & ecosystems, sea level / coastal area /losses of coastal wetlands and mangroves), food security, health and other related areas.
- The impact would be particularly disastrous for developing countries and further degrade the resilience of poor, vulnerable communities, which make up between half of the population of eight SAARC Countries, namely Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka

INTRODUCTION AND BACKGROUND

- The DRR and CCA represent policy goals, one concerned with an ongoing problem (disasters) and the other with an emerging issue (climate change).
- While these concerns have different origins, they overlap a great deal through the common factor of weather and climate and the similar tools used to monitor, analyze and address adverse consequences. It makes sense, therefore, to consider them and implement them in a systematic and integrated manner.
- Taking into account the evolving and rapidly increasing risks, the 16thSummit of the SAARC Heads of the State held in Thimphu in 2010 adopted Climate Change as the theme of the Summit and adopted the 'Thimphu Statement on Climate Change' as a milestone for making the South Asia, the disaster risk resilient under the different climate change scenario.

RATIONALE AND OBJECTIVES OF THE PROPOSED ACTIVITIES

Accordingly, the SDMC has proposed a plan of action and a Terms of Reference to address the clause xiv of the Thimphu Statement on Climate Change 'Commission a SAARC Inter-governmental Climate-related Disasters Initiative on the integration of Climate Change Adaptation (CCA) with Disaster Risk Reduction (DRR) to be supported by SAARC Disaster Management Center', with the following main objectives:

 To prepare a comprehensive study of the policy, institutional landscape and resource allocation for Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) projects in the Member States of the SAARC region

RATIONALE AND OBJECTIVES OF THE PROPOSED ACTIVITIES

- To analyze the issues of convergence and divergence of policies and institutions for Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) in the Member States of the SAARC region
- To recommend how the diverse policy and institutional framework of DRR and CAA can be effectively integrated for reducing the risks of disasters in the SAARC region;
- To prepare an inventory of the DRR and CCA projects already implemented and under implementation in the Member States of the SAARC region

SPECIFIC OBJECTIVES

- To raise awareness among policy makers and local bodies in South Asia on risk sensitive integrated planning practices
- To develop a compendium to guide DRR-CCA integrated planning and investment allocation for SAARC member countries
- To Provide inputs and guidance on the SAARC regional perspective to the Post- 2015 DRR and Development Framework consultation process

OUTCOME of the Study

Integration of
Disaster Risk
Reduction and
Climate Change
Adaptation in
SAARC REGION



Integration of Disaster Risk Reduction and Climate Change Adaptation

in SAARC Region



Implementation of the Thimphu Statement on Climate Change
A Comprehensive Study of the policy,
Institutional Landscape and Resource Allocation for
Disaster Risk Reduction and Climate Change Adaptation in South Asia
(Disaster Prevention, Preparedness & Management, Linkages with CCA)



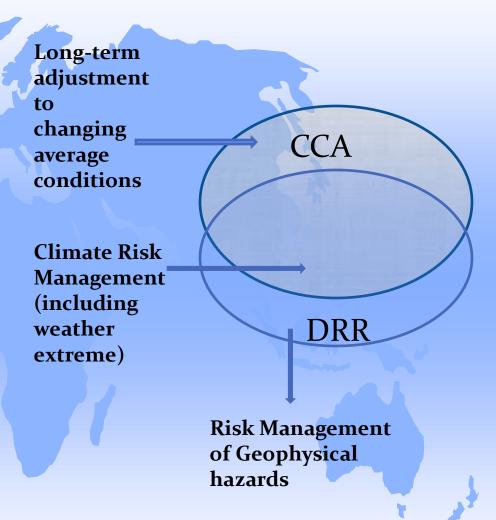




•Climate Change adaptation:

An adjustment in natural or human systems in response to actual or expected climate stimuli or their effects, which moderates harm or exploits benefit opportunities.

• Disaster Risk Reduction: The broad development and application of policies, strategies and practices to minimise vulnerabilities and disaster risks throughout society, through prevention, mitigation and preparedness?



OVERVIEW OF SAARC REGION

Some broad human development indicators of the SAARC member States

		lation lions) 2030	GDP (2005 PPP \$ billion)	GDP per capita (2005 PPP \$)	HDI rank	Pov erty line (%) \$1.25 per day	Land Area (Thou sand Sq. Km)	Forest Area (% of Total Land Area)	Agri- cultural Land (% of total land)	Number of deaths due to natural disaster
Afghanistan	33.4	53.3	37.2 ^B	1083 ^B	175	5-3	652	2.1	58.1	11
Bangladesh	152.4	181.9	236.0	1568	146	43.3	130	11.1	70.3	6
Bhutan	0.8	0.9	3.8	5096	140	10.2	47	69.1	13.2	1
India	1258.4	1523.5	3976.5	3203	136	32.7	3287	23.0	60.5	2
Maldives	0.3	0.4	2.5	7834	104	S=3:	0.3	3.0	26.7	0
Nepal	31.0	39.9	33.6	1102	157	24.8	147	25.4	29.6	6
Pakistan	180.0	234.4	428.4	2424	146	21.0	796	2.2	34.1	3
Sri Lanka	21.2	23.1	102.9	4929	92	7.0	65.6	28.8	41.6	2
Total	1753.0	2141.8	5586.1	3241	-	S=2	5124.9	14.5	33.9	2

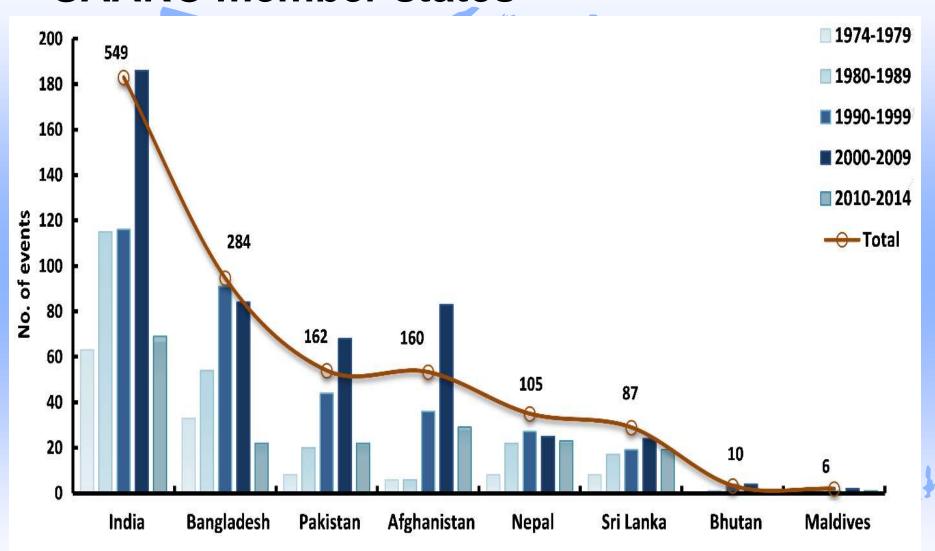
Source: UNDP, 2013, UNISDR-SDMC, 2014.

Potential Risks From Different Hazards

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	Sea Level Rise	Glacier Retreat & GLOFs	Increase in Intensity of Flood	Increase in Intensity of Drought	Temperatu re Rise	Cyclone
Afghanistan	No	Yes	-	Yes	Yes	No
Bangladesh	Yes	Yes	Yes	In some Parts	Yes	Yes
Bhutan	No	Yes	Yes	No	Yes	No
India	Yes	Yes	Yes	Yes	Yes	Yes
Maldives	Yes	No	Yes	No	Yes	No
Nepal	No	Yes	Yes	No	Yes	No
Pakistan	Yes	Yes	Yes	Yes	Yes	Yes
Sri Lanka	Yes	No	1 .	No	Yes	Yes

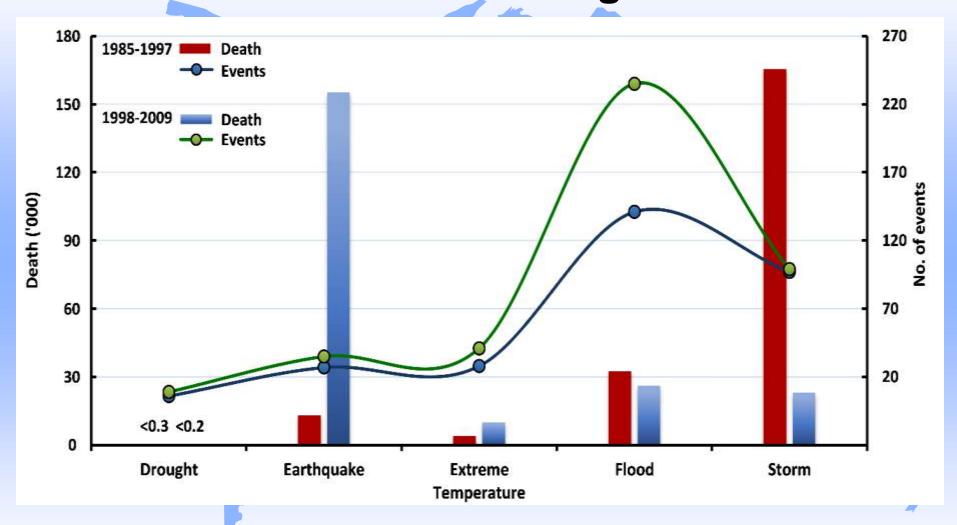
Source: IPCC AR4 and AR5 & South Asia Disaster Reports

Frequencies of various disasters within SAARC member states



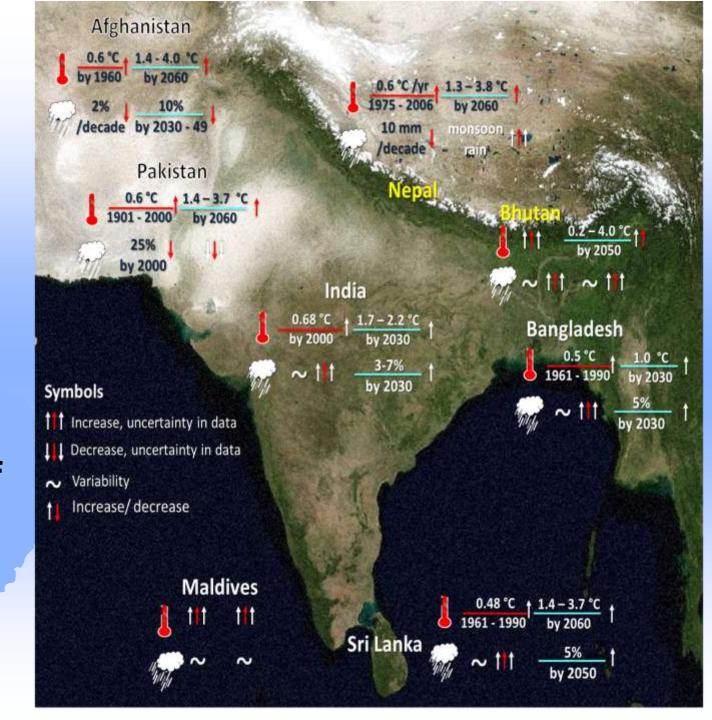
Source: South Asia Disaster Reports, SDMC & Other reports

Occurrence and mortalities of various disasters within SAARC region.



Observed and projected climate trends and variability among member countries of SAARC

based on published scientific literatures.



INITIATIVES TOWARDS DRR AND CCA

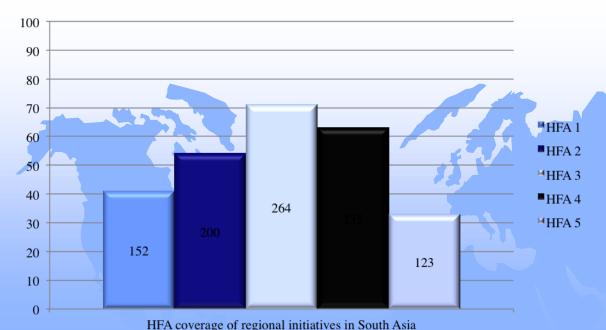
Projects in SAARC Countries (Sector wise)

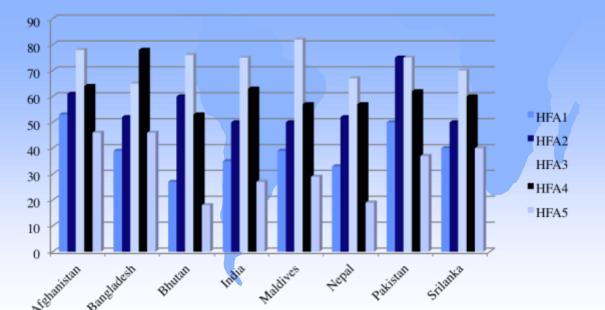
		Sector										
Country (s)	Total No. Of Projects	Natural Resources (Agriculture/water/land/ biodiversity/forestry/ coastal/wetland)	Rural/Urban development	Health	Energy	Society	Communic- -ation	DRM Flood Droug				
Afghanistan	28	21		1	-	2	1	3				
Bangladesh	54	27	2	1	120	9	-	15				
Bhutan	53	32	2	1	6	2	2.5	10				
India	53	33	2	-	1	5	1	10				
Maldives	28	16	270.	1	1	5	1	4				
Nepal	21	13	*	: <u>*</u>	2	2	1	7				
Pakistan	8	5	-	•	-	1	•	2				
Sri Lanka	10	8	0 1 4 1]	-	i e	-	-	2				
Regional CCA & DRR		26 (CCA Projects+ 90	 DRR Proje	ects= 116							
Total	(255+116) 371											

Projects in SAARC Countries (Funding organization wise)

SNo.	Total No. of		Type Of Organization										
	Projects SAARC Countries	•	Regional Inter- Govern-mental Organi-zations	Regional Organizatio	United Nations Organi-zations	Regional Alliances and Networks	Multilateral and bilateral funding institutions	National Organizations	Non- governmental Organizations	Internation al Organizatio ns			
1	Afghanista	an	-	=	4	**	10	14	180	-			
2	Banglades	sh	3	2	10	2		30	6	3			
3	Bhutan		=	7	39	i d a -	1	13	150	-			
4	India		2	3	7	1	2	31	3	4			
5	Maldives	-	=	+	9	-	-	18	1.0	1			
6	Nepal		3	2 0	2	-2-	-	11	4	1			
7	Pakistan		2	*	2	*	-	2	1	1			
8	Sri Lanka		-	-	2	+	-	7	-	1			
Cou	untry wise t	otal	10	5	75	1	13	126	14	11			
9	Regional	CCA	13	2	7	-70	-	4	1.50	157			
		DRR	20	28	20	2	10	8	2				
	Total		43	35	102	3	23	138	16	11			

- Regional Inter-Governmental Organizations: SAARC, DFID, CIDA, IWG, ASEAN
- Regional Organizations: ADPC, CARE, ICIMOD, IFRC, IUCN, SEI, CICERO, ICRISET, IWMI
- United Nations Organizations: UNISDR, UNDP, UNESCAP, UNEP, UNESCO, UNICEF, FAO, UNOCHA, WHO, WMO, UNITAR, IPCC, ADRC, World Bank, WWF, GEF
- Regional Alliances and Networks : ADRRN
- Multilateral and bilateral funding Institutions: ADB
- National Organizations: NSET, NDMA, ANDMA, Aus AID, Local Govt.
- Non-governmental Organizations : Practical Action
- International Organizations: GIZ, Catholic Relief Services (CRS)





HFA

Priority for action 1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation

Priority for action 2: Identify, assess and monitor disaster risks and enhance early warning

Priority for action 3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels

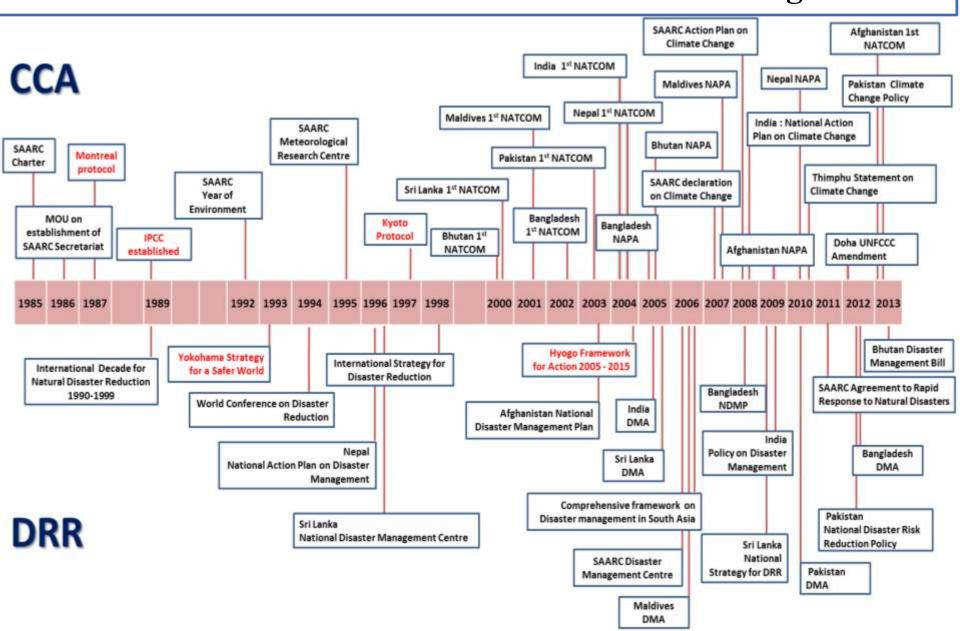
Priority for action 4: Reduce the underlying risk factors

Priority for action 5: Strengthen disaster preparedness for effective response at all levels

Key Activities	HFA 1	HFA 2	HFA 3	HFA 4	HFA 5
A. Mainstreaming in development					
National Policy plans and legal Framework	✓				✓
Rural and urban development planning				✓	
Development in health sector				✓	
Development in Education			√		
Mainstreaming DRR in Housing				✓	
Mainstreaming Livelihood				✓	
Land use planning				✓	
Natural Resource Management		✓		1	
Socio-economic planning and development				~	
Integration of DRR and CCA	120			~	
Structural and non- structural measures			✓	~	
Rehabilitation and recovery planning				✓	
Risk reduction measures				✓	
B. Management of Knowledge and Awareness					
Disaster Database/Tools and Technology and Information		✓	✓	7.7	
System Information accessibility and management		√	√		✓
Development of information sharing system and		·	<u> </u>		<u> </u>
management					
Sharing of Knowledge and Experience			✓	✓	
Strengthen the mechanism for risk, vulnerability and impact assessment			✓		
Risk mapping, indicators, Disaster Statistics		✓			
Dissemination of information through media and public awareness campaign			√		
Early Warning System		✓			
C. Capacity Building	•				
Mechanisms and capacities of institutions for the		✓			~ / ~ \
management of risk, early warning etc education and Training programmes for risk measurement			✓		
Technical and scientific capacity for risk assessment			<u> </u>		•
Enhancement of Emergency Response			<u> </u>		~
Strategies and Plans for Capacity Building	_		<u> </u>		V
Responsibility and resource allocation			•		
Risk management/contingency plans	~				Y
				~	~
D. Joint efforts and mutual cooperation					
Networking and Partnership of various Institutions, Communities and Organizations	✓		✓		
Volunteerism, Community participation, Civil society	~				
Regional cooperation and approaches	✓	✓			✓
Collaboration of Public and Private Sectors				✓	



Time series for development of major approaches, legislations and institutions for CCA and DRR within SAARC region



Monitoring and forecasting of extreme weather events such as cyclones, thunderstorms, floods and droughts

Policies and measures for drought management and building the resilience of farmers and to deal with drought, pestilence, etc.

Representation in the NCMC and national executive council under the NDMA. Providing monitoring and forecasting inputs in times of flood emergencies.

Satellite observations and monitoring of weather parameters; satellite based communications during disasters

Impact of disasters on public health, epidemics and pandemics; post disaster emergency medical response mechanisms Ministry of Science & Tech AND MoES

Ministry of Agriculture

Ministry of Water Resources &

Ministry of Rural Dev.

Department of Space

Ministry of Health & Family Welfare

Climate change modelling, forecasting the change in weather elements such as temperature, rainfall, etc. over longer time scales

Impact of extreme weather events and climatic variability in form of droughts, temperature extremes and rainfall shifts on agriculture sector, constructing impact and vulnerability scenarios

Rainwater harvesting, Watershed Management, Drought proofing & flood control Climate change structure

Climate change modelling and impact scenarios

Impact of climatic variability such as Extreme temperatures rainfalls and extreme events on pubic health, mortality and morbidity; construction and impact scenarios

Missing links in the Institutiona **I** Interfaces

Disaster Management Framework

MoHFW Emergency Climate change Malaria Relief Research Division Centre MoA Indian Dept. of Agriculture Agriculture & Research Cooperation Institute Mo S&T / MoES **NCMRWF** IITM **IISC IMD**

Framework

Interfaces that need to be developed

Schematic diagram showing holistic approach for integrating DRR with CCA for SAARC region

National level

- 1. Institutional linkage.
- 2. Mechanism for converging policy, planning and programs
- 3. Setting up platforms knowledge managements.
- Mechanism for self-assessment tool for monitoring and evaluation of activities.
- Sectoral capacity development through national pool of experts.
- 6. Implementation of Disaster Management Response cycle (DMRC) at national level.

Area of divergence

- Diverse institutional structure
- Disconnected policies, and planning
- Lack of inter sectoral communication & dialogues
- Lack of information
- Capacity constraints
- Separate global and regional framework for CCA & DRR

Integration of DRR & CCA

Disaster Risk Reduction (DRR)

- Early warning systems (EWS)
 Strategies
- HVR assessment /monitoring
 Response strategies
- Mitigation & preparedness

Integration of technologies

- Targeting climate related disaster risks
- Designing risk reduction strategies
- Integrating climate & EWS information in decision making
- Minimizing duplication of efforts
- Efficient use of scarce resources
- Guidance to national/ local government
- Considering economics for increased integration of DRR and CCA

Area of convergence

- Climate information
- Watershed & coastal zone development
- Land use planning
- Settlement, physical and social infrastructure planning
- Flood plain management
- Bottom-up approach

Regional level

- 1. Regional level.
- 2. Setting up regional coordination mechanism.
- 3. Creating pool of regional experts for capacity building.
- Long term and non lapsable fund.
- Evolving new tools and techniques.
- 6. Creation of regional response facility.
- 7. Implementation of DMRC at regional level.

Institutional networking

Climate Change Adaptation (CCA)

- Human health
- Environment security
- Green energy
- Agriculture & forestry
- Eco tourism
- Food security
- Land use planning
- Water conservation



