APP
ASIAN PREPAREDNESS PARTNERSHIP

Regional Synthesis Report

Baseline Assessment of Humanitarian Ecosystems in Selected Countries in Asia
Cambodia | Myanmar | Nepal | Pakistan | The Philippines | Sri Lanka

BILL & MELINDA GATES foundation

adpc

Regional Synthesis Report
Baseline of Humanitarian Ecosystems in Asia

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For more information, please contact app@adpc.net

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We wish to thank Dr. Valerie Nkamgang Bemo from the Bill and Melinda Gates Foundation, key project personnel from ADPC, enumerators and support staff from the many agencies and organizations in Cambodia, Myanmar, Nepal, Pakistan, the Philippines, and Sri Lanka for their contributions to the Baseline Assessments and this synthesis report.

Foreword

On behalf of the Asian Disaster Preparedness Center (ADPC), I am pleased to present the Volume 2 (revised version) of the 'Regional Synthesis Report of the Humanitarian Ecosystems in Selected Countries in Asia'. This analysis was undertaken to assess the emergency response capacity, systems and mechanisms, and inter-agency coordination between the National, Sub-National, and Local Humanitarian Organizations in six selected countries throughout Asia. Three countries are located in South Asia, namely Nepal, Pakistan, and Sri Lanka, and three are located in South-East Asia, specifically Cambodia, Myanmar, and the Philippines. The content of this Volume 2 not only fills up the gaps in data analysis from the previous volume but also incorporates revised presentation of the comparative analysis between the countries.

The humanitarian architecture in Asia is still in its infancy stage, where the United Nations-led cluster system for humanitarian response is yet to be fully developed and implemented. This has resulted in duplication of efforts, limited access to humanitarian funds, lack of vertical and horizontal coordination, and a lack of leadership among local humanitarian agencies during mega disasters. The risk to communities in disaster prone areas is significantly higher due to elevated social vulnerabilities associated with the absence of institutional systems and mechanisms at local levels. There is an urgent need for additional complementary support devoted to strengthening local emergency response capabilities and establishing institutions and systems in order for at-risk countries in the region to be better equipped to face future disasters, which are likely to occur due to the evolving patterns of climate change.

At the 2016 World Humanitarian Summit in Istanbul, the global Disaster Risk Reduction community emphasized the need for humanitarian reform processes. These include a focus on improved humanitarian leadership; better coordination of humanitarian action; faster, more predictable and equitable humanitarian funding; more effective partnerships among actors; and the localization of humanitarian efforts. Contributing to the humanitarian reform process, ADPC in partnership

with the Bill and Melinda Gates Foundation (BMGF), is implementing the program "Strengthening Capacity of Government, Local Humanitarian Organizations and the Private Sector on Preparedness for Response in Asia". This program led to the establishment of the Asian Preparedness Partnership (APP) in the region, in August 2017, which has strived to improve the preparedness and humanitarian response to disasters, strengthen the interface and partnership between Government, Local Humanitarian Organizations, and the Private Sector, as well as enhance capacities through partnerships, knowledge resources, training, and networking opportunities.

Each program country in of the APP undertook a country-specific baseline assessment to increase knowledge of the current context and engagement of government entities, local NGOs and civil society organizations, international organizations, the private sector, academia, and media in emergency response. This report is a regional synthesis of the country-specific baseline assessment results that describes the humanitarian ecosystem in the region. The aim of this regional synthesis report is to serve as a road map to provide direction for future efforts aimed at building capacity, improving coordination, and strengthening the humanitarian institutional leadership of stakeholders. I hope this report will guide efforts to strengthen the preparedness for humanitarian response throughout the region.

Sincerely,

Hans Guttman
Executive Director
Asian Disaster Preparedness Center

Contents

Acronyms and Abbreviations

AADMER	Agreement on Disaster Management and Emergency Response
AAL	Annual Average Loss
ADPC	Asian Disaster Preparedness Center
AHA Centre	Centre for Humanitarian Assistance on Disaster Management
AIN	The Association of International NGOs in Nepal'
ALNAP	Accountability and Performance in Humanitarian Action
APP	Asian Preparedness Partnership
ARA	Association Registration Act 1977
ARDEX	ASEAN Regional Disaster Emergency Response Simulation Exercise
ARRND	Agreement on Rapid Response for Natural Disasters
ASEAN	Association of Southeast Asian Nations
AUEDM	Asian University Network of Environment and Disaster Management
BMGF	Bill and Melinda Gates Foundation
CAP	Common Alerting Protocol
CAT-DDO	Catastrophic Drawdown Option
CBDRM	Community Based Disaster Risk management
CBS	Central Bureau of Statistics
CDC	Council for the Development of Cambodia
CDP	Center for Disaster Philanthropy
CEDAW	Convention on the Elimination of all Forms of Discrimination Against Women
CHF	Cambodian Humanitarian Forum
CHS	Core Humanitarian Standards
CKD	Chronic Kidney Disease
CRED EM – DAT	Centre for Research on the Epidemiology of Disasters, Emergency Events Database
DCDM	District Committees for Disaster Management
DDMA	District Disaster Management Authorities
DDMCU	District Disaster Management Coordinating Units
DDRC	District Disaster Relief Committees
DEM	Digital Elevation Model
DEOC	District Emergency Operation Centre
DEWN	Disaster and Emergency Warning Network
DLSA	District Lead Support Agencies
DMC	Disaster Management Center
DMH	Drought Monitoring Center of Department of Meteorology and Hydrology
DMP	Drought Management Program
DPL	Development Policy Loan
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DRRM Act	Disaster Risk Reduction and Management Act (Phillipines)
DRRMCs	Regional Disaster Risk Reduction Management Committees
EOC	Emergency Operation Centre
ERP	Inter-Agency Emergency Response Preparedness
ES	Exposure and susceptibility
FAO	Food and Agriculture Organization of the United Nations
FDMA	FATA Disaster Management Authority
FGDs	Focus Group Discussions
FMMP	Flood Management and Mitigation Program
FPW	Philippine Framework Plan for Women
GAD	General Administration Department
GAR	Global Assessment Report
GBDMA	Disaster Management Authority () for Gilgit-Baltistan
GDI	The Gender Development Index
GER	Gross Enrollment Ratio
GFDRR	The Global Facility for Disaster Reduction and Recovery
GII	The Gender Inequality Index
GLOF	Glacial Lake Outburst Floods
GNI	Gross National Income

GSM Global System for Mobile

HAP The Humanitarian Accountability Partnership

H-A-R Action Plan Harmonization, Alignment and Results

HCT Humanitarian Country Team

HDI Human Development Index

HRF Humanitarian Response Forum

IASC The Nepal Inter Agency Standing Committee

ICIMOD International Centre for Integrated Mountain Development

ICT Information and communications technology

IDB Inter-American Development Bank

IDI ICT Development Index

IDPs Internally Displaced Persons

IFRC International Federation of Red Cross and Red Crescent Societies

IMF International Monetary Fund

INGOs International Non-Governmental Organizations

IOM International Organization for Migration

IPCC The International Panel on Climate Change

KII Key Informant Interviews

LANGO Law on Associations and NGOs

LAPA Local Adaptation Plan of Action

LECZ Low Elevation Coastal Zone

LGUs Local Government Units

LICs Low-Income Countries

LRC The Local Resource Center

M & E Monitoring and Evaluation

MAPDRR Myanmar Action Plan on Disaster Risk Reduction

MCCRMD Mainstreaming Climate Change Risk Management into Development

MCCSAP Myanmar Climate Change Strategy and Action Plan

MCDN Municipal Committees for Disaster Management

MCW Magna Carta of Women

MDGs Millennium Development Goals

MHVRA Multi Hazard Vulnerability Risk Assessment

MNN The Myanmar NGO Network

MoHA Ministry of Home Affairs

MOI Ministry of Interior

MoU Memorandum of Understanding

MRC The Mekong River Commission

NAP National Adaptation Plan on Climate Change

NAPA National Adaptation Program of Actions

NASA National Aeronautics and Space Administration

NCDM National Committee for Disaster Management or National Council for Disaster Management

NCD Non-communicable diseases

NDMA National Disaster Management Authority

NDMC National Disaster Management Commission or National Disaster Management Committee

NDMF National Disaster Management Fund

NDMP National Disaster Management Plan

NDRF National Disaster Response Framework

NDRP National Disaster Response Plan or National Disaster Response Plan for Hydro-Meteorological Hazards

NDRRMC The National Disaster Risk Reduction and Management Council

NDRRMF	National Disaster Risk Reduction and Management Fund
NDRRMP	National Disaster Risk Reduction and Management Plan
NEOC	National Emergency Operating Center
NEOP	The National Emergency Operations Plan
NGO	Non-Governmental Organization
NITF	National Insurance Trust Fund
NRCS	Nepal Red Cross Society
NSDP	Five-year National Strategy Development Plan
NSDP	National Strategic Development Plan
OCD	Office of the Civil Defense
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OECD	Organization for Economic Co-operation and Development
PCDM	Provincial Committees for Disaster Management
PDMA	Provincial Disaster Management Authority
PDNA	Post-Disaster Needs Assessment
PINGON	Philippine International Non-Government Organization Network
PVI	Prevalent Vulnerability Indicators
RCG	Regional Consultative Group
RCRANRM	Responding to Climate Risks in Agriculture and Natural Resource Management
SAARC	South Asian Association for Regional Cooperation
SDGs	Sustainable Development Goals
SDMA	State Disaster Management Authority
SEADRIF	Southeast Asia Disaster Risk Insurance Facility
SF	Socio-economic Fragility
SFDRR	Sendai Framework for Disaster Risk Reduction
SNAP	Five-year Strategic National Action Plan for Disaster Risk Reduction
SNAP	Strategic National Action Plan for Disaster Risk Reduction 2009-19
SNC	Second National Communication
SOPs	Standard Operation Procedures
SPCR	Strategic Program for Climate Resilience
ToT	Training-of-Trainers
UMFCCI	Union of Myanmar Federation of Chambers of Commerce and Industry
UNDP	United Nations Development Programme
UXO	Unexploded ordnance
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
UNISDR	United Nations International Strategy for Disaster Reduction
UoM	University of Moratuwa
UPOU	University of the Philippines Open University
USAID	United States Agency for International Development
VSSO Act	The Voluntary Social Service Organization Act No. 31 of 1980
VSWA	Voluntary Social Welfare Agencies (Registration and Control)
WASH	Water Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organization
WON	The Women's Organizations Network

Executive Summary

This report is a synthesis of the baseline studies carried out in six Asian countries - Cambodia, Myanmar, Nepal, Pakistan, Philippines and Sri Lanka, as a first step to implement the program "*Strengthening Capacity of Government, Local Humanitarian Organizations and the Private Sector on Preparedness for Emergency Response*", which is a collaboration between the Asian Disaster Preparedness Center (ADPC), Bangkok and the Bill & Melinda Gates Foundation. The report provides a contextual analysis of prevalent vulnerabilities that influence effectiveness of emergency response, a snapshot of the humanitarian ecosystem and the findings of the baseline surveys. Country-specific Road Maps have been formulated based on the findings of the survey.

The expectation of the program implementation is to nurture south-south knowledge exchange within the region and beyond through the flagship regional platform - the Asian Preparedness Partnership (APP) founded under the program.

Prevalent vulnerability conditions presented here include the geography, climate, population density, human development, income and its disparity, literacy, poverty, gender inequality, access to technology and access to natural resource etc. The six countries show considerable variation of these conditions, which, may assist perception of different scales of emergency preparedness needed in the different countries. The scope of the present study did not allow the formulation of country-specific weighted bench mark indices for Prevalent Vulnerability Indicators (PVI) as a tool to measure changes in prevalent vulnerability over time.

The report then moves to a comparative study of the hazards, disaster risk and climate risk of the six countries. The Internationally Reported Database CRED EM - DAT disaster data has been used in this comparison. The frequency of occurrence and estimates of Annual Average Loss (AAL) for the six countries has been used for the comparison. UNISDR recommendation to use Annual Average Loss (AAL) as an indicator of disaster risk reveals that flood loss constitutes the entire AAL in Cambodia. Although frquency of occurrence is given for droughts and storms, they have not contributed to the AAL in Cambodia.

Flood loss constitute the major portion of the AAL in Myanmar. Storms constitute a minor portion. The frequency of landslide and earthquake is depicted but the loss from these hazards has been grouped into the "other" category in the AAL.

In Nepal, flood loss is the major component with landslides as the minor component in the AAL. Although frequency has been depicted for extreme temperatures, storms, earthquakes, drought and wildfire, loss from these hazards is not shown in the AAL.

In Pakistan the AAL is constituted by flood loss as the major component, followed by loss from earthquakes. The frequency is depicted for landslides, storms, and extreme temperatures but loss from these hazards has been grouped into "other " category forming a minor portion in the AAL.

In the Philippines, loss from storms and storm surges constitute the major portions of the AAL followed by loss from earthquakes, volcanoes and flood as relatively minor components.

In Sri Lanka, loss from floods form the major component of the AAL followed by storms. Loss from oter hazards depicted in the frequency has been grouped into the "other" category which forms a minor component in the AAL.

Of the low frequency disasters reported, Myanmar and Sri Lanka had suffered severe impacts from the 2004 Asian Tsunami.

Of other potential hazards, Nepal and Pakistan are vulnerable to glacial lake outburst flood (GLOF). Information on Myanmar glaciers is scarce.

Global Assessment Report (GAR15) has produced global multihazard risk indices for individual countries based on cyclone wind, earthquake, flood, storm surges and Tsunami. Of the six categories of multihazard risk defined therein, Philippines falls into the highest risk category. Pakistan and Myanmar falls into the second highest category. Cambodia falls into the third highest category while Nepal and Sri Lanka fall into the fifth highest category.

According to INFORM Risk Index Myanmar, Nepal, Pakistan and Philippines fall into the "high" category with Cambodia and Sri Lanka in the "medium" category.

According to the Verisk Maplecroft Climate Vulnerability Index (2016), all six target countries are vulnerable to climate change. Philippines shows the highest vulnerability. It must be noted that vulnerability will change over time and therefore the depiction must only be taken as a red flag signal that the probability of extreme climate events may increase over time.

All six countries show adequate legal and institutional frameworks for DRM. Government allocations for DRM varies across the six countries with Philippines showing a higher commitment.

The baseline survey has included government institutions, local NGO, private sector organizations, media and the academia in each country sample. Instruments used for the baseline assessment include a situational analysis based on a literature survey, structured questionnaire survey, focus group discussions (FGDs) and key informant interviews (KII). Countries have been guided by a generic questionnaire to ensure consistency and comparability of the findings. Data collected has been collated online for analysis using tools of Survey Monkey.

Responses from majority government and non-government organization show a satisfactory level of organizational vision and mission in all countries. All government organizations have a defined legal mandates and organizational structures.

In Myanmar and Philippines, some of the LNGO sampled have been informally constituted without the need for formal registration. All other LNGO in the six countries have undergone an official registration process.

Government organizational responses for availability of documented administrative and operational procedures is highest in Nepal followed by Sri Lanka, Philippines, Pakistan and Myanmar respectively. In the LNGO sector responses were highest for Nepal followed by Pakistan, Cambodia, Sri Lanka, Philippines and Myanmar respectively. The LNGO sector appear to provide a higher level of staff orientation on administrative and operational policies when compared to their government counterparts. In Nepal workplace policy has been established throug legislative enactments. Responses from LNGO in Nepal reveal the highest availability of workplace policy. Other five countries show variable but fair levels of responses on availability of workplace policy. Notably, they appear to lack gender sensitive workplace policy. Low or absence of staff Insurance for those working in hazardous areas emerged as a serious concern. Responses for financial management in both sectors were high in all countries except the low level depicted for the LNGO sector in Myanmar. With regard for M & E policy, Cambodia and Pakistan need significant enhancement.

In the assessment of the technical capacity for emergency response, staff adequacy to perform emergency response activities emerged as an area of concern. In all countries, the LNGO sector responses appeared to be better than the government sector for staff adequacy. Perception of the availability of emergency response plans for the government sector is high in all the countries but the development of Emergency Response Plans needs to be enhanced for the LNGO sector. Perception of the availability of SOPs is high in the government sector of five countries except Sri Lanka. This may need strengthening in the LNGO sector in the six countries. Perception in both government and LNGO sectors on the conduct of simulation drills is high except in Pakistan and Cambodia. A considerable gap exists between

the desirable and achieved capacity building in both government and LNGO sectors. Perceived needs are also different across the countries. Gender disaggregated overview of opportunity provided for capacity building of male and female staff vary country-wise. In Cambodia and Sri Lanka female staff have had better access to opportunities for capacity building in both government and LNGO sectors. In Myanmar males and females have had even opportunities in both sectors. Government sector male staff in Nepal, Pakistan, and Philippines have had higher opportunity while females in the LNGO sectors have had slightly better opportunity for capacity building. Perception of effectiveness of coordination during emergency response was positive for both government and LNGO sectors in all countries except Sri Lanka. In Sri Lanka, while government perception was positive, the LNGO perception was negative indicating inadequate coordination.

Knowledge management in terms of available data bases is high in five countries with the lowest responses from Pakistan. All six countries may benefit from capacity building in the production of knowledge materials.

Affiliation to Humanitarian standards show variable status in the six countries.

All countries have institutionalized the cluster approach for emergency response except Sri Lanka. INGOs are active in humanitarian activities in all countries and contribute to capacity building.

The private sector involvement in emergency response is mainly contributing in response work after disaster impact and its participation needs enhancement in all six countries.

Involvement of academia through integration of disaster risk management into undergraduate and post graduate curricula is visible in all six countries and could lead to knowledge building through research.

Recommendations of this synthesis report include review of existing emergency response plans, formulating capacity building initiatives based on an in depth need analysis, enhancement of coordination between stakeholders, provision of specialized training in knowledge management and carrying out orientation of policy makers to enhance political will for effective emergency response.

Synthesis Report on the Program "Strengthening Capacity of Government, Local Humanitarian Organizations, and the Private Sector on Preparedness for Emergency Response in Cambodia, Myanmar, Nepal, Pakistan, the Philippines and Sri Lanka"

The Program

The Asian Disaster Preparedness Center (ADPC), Bangkok, in partnership with the Bill and Melinda Gates Foundation (BMGF) is implementing the program "*Strengthening Capacity of Government, Local Humanitarian Organizations, and the Private Sector on Preparedness for Emergency Response*" in six Asian countries, specifically Cambodia, Myanmar, Nepal, Pakistan, the Philippines and Sri Lanka. Country selection was based on the extent of current vulnerability and risk faced by these countries. The countries span variable landscapes in terms of geography, topography, demography, governance structures, socio-economy, hazards and exposure, vulnerability, coping capacity, and human development. Cambodia, Myanmar and the Philippines belong to the Association of Southeast Asian Nations (ASEAN) region, while Nepal, Pakistan and Sri Lanka belong to the South Asian Association for Regional Cooperation (SAARC) region.

Through a strong understanding of the variation within the humanitarian ecosystems explained below in the selected countries, the program aims to improve emergency preparedness and disaster response. The objective is to strengthen the coordination between the government, local humanitarian organizations, and the private sector for effective emergency response.

The specific program objectives are as follows:

- Improve humanitarian leadership and coordination through systematically strengthening local institutions
- Develop better coordination of humanitarian actions by enhancing humanitarian information management and knowledge exchange
- Establish more effective partnerships among national and local humanitarian actors

The program is expected to nurture south-south knowledge exchange within the region and beyond through the Asian Preparedness Partnership (APP), the flagship regional platform that was founded under the program.

Defining Humanitarian Action

The Good Humanitarian Donorship Initiative (2003)[1] defines the objectives of humanitarian action as saving of lives, alleviation of suffering, and maintaining human dignity during and in the aftermath of crises and natural disasters, as well as preventing and strengthening preparedness for the occurrence of such situations. According to the Active Learning Network for Accountability and Performance in Humanitarian Action 2016 (ALNAP),[2] "*Humanitarian action includes responding to a crisis, supporting preparedness and disaster risk reduction (DRR) before a crisis, and recovery and rehabilitation afterwards –*

1 Good Humanitarian Donorship Initiative, (2003), International meeting on good humanitarian donorship. Stockholm: GHD. (www.alnap.org/resource/22940.aspx).
2 ALNAP (2016) Evaluation of Humanitarian Action Guide. ALNAP Guide. London: ALNAP/ODI.

although preparedness and recovery fall between humanitarian and long-term development activities. There is a growing recognition of the importance of addressing recovery needs in the immediate wake of a natural disaster. In conflicts and other protracted crises, it is often unclear when the emergency ends and recovery begins. In practice, both types of support are often needed and provided simultaneously."

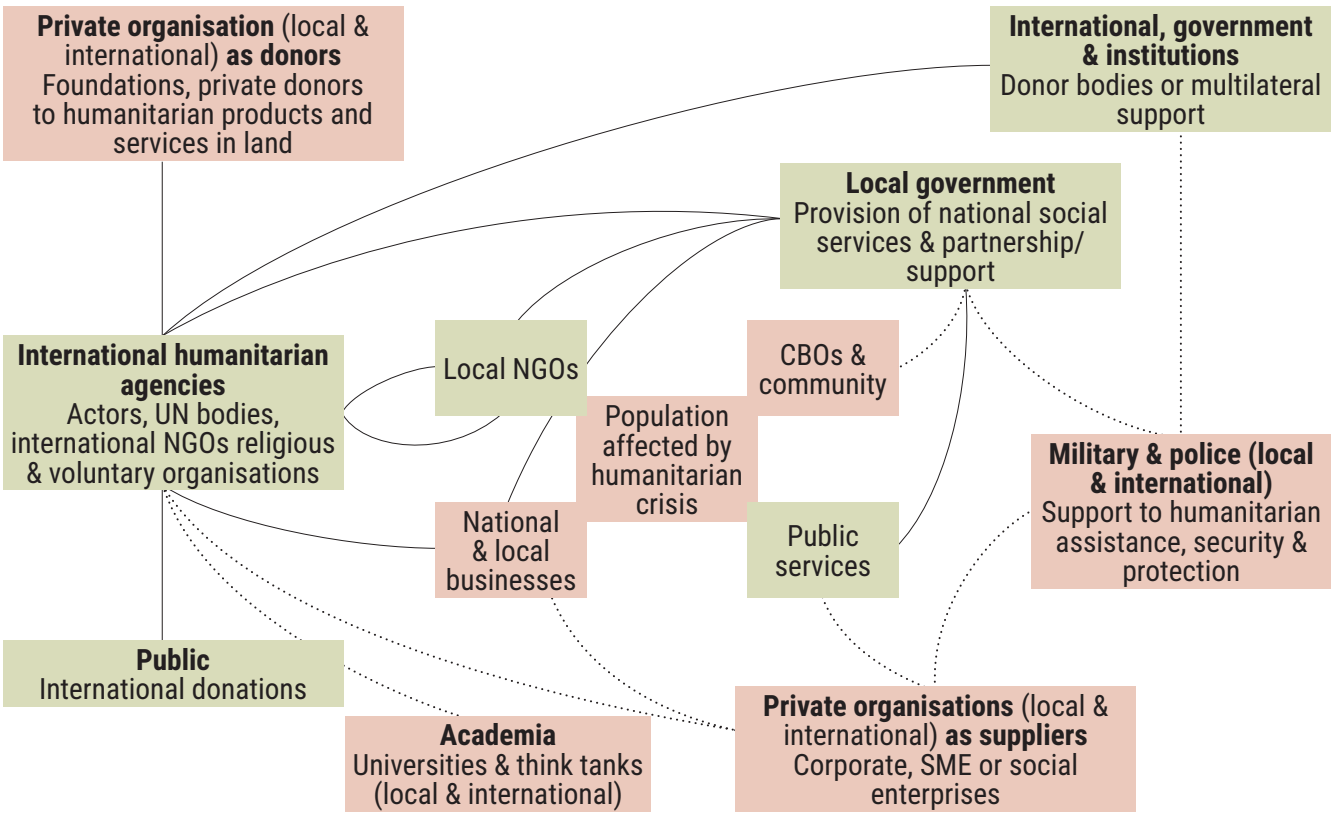
There is also a growing recognition that saving livelihoods is a key component of humanitarian action.

Conceptualizing the Humanitarian System

ALNAP (2015)[3] defines the humanitarian system as "*the network of interconnected institutional and operational entities through which humanitarian assistance is provided when local and national resources are insufficient to meet the needs of the affected population*".

Although the term 'ecosystem" originated in the discipline of biology to mean all of the living things (plants, animals and organisms) in a given area, interacting with each other, and with their non-living environment, the term has been adopted for many other sectors to mean "*any system or network of interconnecting and interacting parts*".[4]

Figure 1 The Humanitarian Ecosystem



3 https://www.alnap.org/our-topics/the-state-of-the-humanitarian-system
4 http://www.dictionary.com/browse/ecosystem

The United Nations Office for the Coordination of Humanitarian Affairs (OCHA)[5] conceptualizes the Humanitarian Ecosystem as the spread of actors and the opportunities for connections in a network through both common linkages and less-common ones for greater engagement and the development of initiatives to provide an "innovation ecosystem" to accelerate adaptation and learning. This concept is graphically depicted in Figure 1. The "*Istanbul Dispatch*"[6] from the World Humanitarian Summit 2016, states that the use of the word *"Humanitarian Ecosystem"* by UN relief chief Stephen O'Brien in his speech, recognized a paradigm shift of the humanitarian system from the model of a single large humanitarian system to a much more realistic and cooperative model of a lively ecosystem of a large number of interacting and distinct actors.

Scope of the Synthesis Report

Each country in the program has undertaken a country-specific Baseline Survey and Assessment to better understand the current context and engagement of government entities, local NGOs/civil society organizations, international organizations, academia and the media in emergency response. Key findings from the surveys informed the formulation of country-specific Road Maps and Action Plans identifying interventions that are required to achieve the program objectives.

This report is a synthesis of the country specific Baseline Assessment reports, and provides an overview of the current context across the six program countries. This called for a comparative investigation of proxy indicators that influence hazard impact, vulnerability, exposure, and risk that deters the enhancement of coping capacities of at-risk communities in each country. These include geographic, economic, political, social and environmental aspects, among others, that influence the sustainability of human development. These factors influence not only the current risk, but also the ability to cope with potential future risk. This synthesis report has been informed by global endeavors such as the Sustainable Development Goals (SDGs) (2015-2030), the Paris Agreement on Climate Change (2020-2030), the Sendai Framework for Disaster Risk Reduction (SFDRR) (2015-2030), and the Rio Conventions (1992) that guide the field of disaster risk reduction. The main thrust of this report is a comparative study of operational dynamics within the humanitarian ecosystem in the context of disaster and climate risk landscape. The goals are to provide a baseline and establish key indicators to measure country-specific progress in future interventions.

Capacity Building

The Organization for Economic Co-operation and Development (OECD) defines institutional capacity "*as the sum of organizational, structural and technical systems, as well as individual competencies that create and implement policies in response to the needs of the public*".[7]

According to the World Bank, institutional capacity building encompasses three main activities: skills upgrading (who?), procedural improvements (how?), and organizational strengthening (what system?). Implementing these activities lead to a more efficient and effective operation of institutions and organizations.[8] Others consider the different types of capital that need to be developed (e.g., institutional, human, financial, technical, etc.) in order to improve performance. The questions asked in these Baseline Assessments have attempted to capture these needs aligned with the priorities of the SFDRR.[9]

5 OCHA (2014) Humanitarian Innovation: The State of the Art, OCHA Policy and Study Series 2014/009
6 http://blogs.icrc.org/law-and-policy/2016/05/26/istanbul-dispatch/
7 OECD Public Management Reviews: Ireland 2008. Towards an Integrated Public Service
8 Odeck J, "Position Paper: Institutional Capacity Building", World Road Organisation (PIARC), 2005
9 http://www.unisdr.org/we/coordinate/sendai-framework

Prevalent Conditions that Influence Emergency Response Capacity

Geographical Characteristics of the Six Target Countries

Table 1 provides a comparison of the size, topography, and climate of the target countries. These features shape the backdrop for hazard exposure and susceptibility.

Area and Topography

Pakistan is the largest country by area followed by Myanmar, the Philippines, Cambodia, Nepal, and Sri Lanka. The land area and mountainous terrain in many countries pose challenging conditions for equitable relief distribution efforts across remote rural landscapes. The Pakistan earthquake in October 2005 provides a clear example of such challenges during emergency response. Despite outside assistance with helicopters for relief distribution, many affected persons were not reached. Eighteen days after the earthquake, Pakistan's then Prime Minister Shaukat Aziz requested the survivors who could not be reached to try to make their own way down to valleys and to larger centers, where possible.[10] Similarly challenging conditions were encountered after the Nepal earthquake in 2015. Urgent appeals from Nepal's government for more helicopters for the rescue and relief operations in April 2015 echoed the experience of 2005 Pakistan. Reaching vulnerable communities perched on the edges of the Himalayan mountain range is a scenario with no simple solution.[11] Likewise, in Myanmar, early warning messages are unable to reach the remotest communities due to the difficult geographical terrain and lack of communication lines.[12]

Climate

Climatic conditions and knowledge of the seasonality of hydro-meteorological hazards help to prepare countries for emergency response. Cambodia, the Philippines and Sri Lanka have a tropical monsoonal climate. Cambodia has a southwesterly monsoon from May to October followed by a dry season. The Philippines and Sri Lanka have two monsoon seasons, the southwesterly and northeasterly with inter-monsoonal periods. Nepal, Myanmar and Pakistan have a variation of climatic conditions due to their mountain ranges. Myanmar has a tropical monsoonal climate with two monsoons in the lowlands, while higher altitudes have a temperate climate. Nepal and Pakistan have four seasons. Nepal has a monsoonal season from June to August. Its average temperature drops with altitude. Pakistan has a tropical monsoonal climate with four seasons in the lowlands and a temperate climate at higher altitudes.

Prevalent Vulnerability across the Target Countries

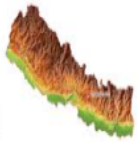
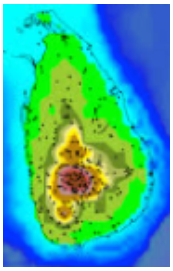
A 2016 review[13] of the literature on concepts of vulnerability, models, and metrics and tools confirms that most studies accept the basic assertion that "*risk is a function of (a) exposure to a hazard, (b) susceptibility or sensitivity to harm or loss, (c) degree of personal or social protection enjoyed, and (d) capacity to cope or adapt to the impact of the hazar*d."

Disaster risk is a "potential", while vulnerability is a "condition" and represents the susceptibility of a given population to harmful effects from

10 http://www.bbc.com/news/world-asia-32511429
11 https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/12/GSMA_Disaster-Response_Nepal_Workshop.pdf
12 Myanmar National HFA Progress (2009-11)
13 Wisner, Benjamin. (2016), Vulnerability as Concept, Model, Metric, and Tool, Oxford Research Encyclopedia of Natural Hazard Science, Oxford University Press USA, http://naturalhazardscience.oxfordre.com/view/10.1093/acrefore/9780199389407.001.0001/acrefore-978

Table 1

Comparison of Geographic Profiles

Geographic Location	Cambodia	Myanmar	Nepal	Pakistan	The Philippines	Sri Lanka
	12.5657° N, 104.9910° E	21.9162° N, 95.9560° E	28.3949° N, 84.1240° E	30.3753° N, 69.3451° E	12.8797° N, 121.7740° E	7.8731° N, 80.7718° E
Area	**181,040 km2**	**653,508 km2**	**147,181 km2**	**803,940 km2**	**300,000 km2**	**65,525 km2**
Topography	 Rolling plains. Tonle Sap (Great Lake) and the Mekong River are large and centrally located. The river delta is rimmed with mountain ranges to the southwest and to the north.	 Central lowlands surrounded by a horseshoe of steep, rugged highlands, where the highest point is 5,881 m.	 Topography progresses from altitudes of less than 100 m in the southern plains, up to 8,000 m peaks in the north. Divided into five ecological zones identified by morphological, geological and tectonic features.	 Three major geographic areas: the northern highlands, the Indus River plain, and the Baluchistan Plateau. The highest point from mean sea level rises to 8,611 m.	 Archipelago with 7,107 islands with volcanic mountain masses forming the cores of most of the larger islands	 A highland mass is ringed by upland ridges and valleys surrounded by lowlands and a coastal belt. From sea level, the relief ascends in 3 peneplains to a maximum of 2,500 meters.
Climate	Tropical monsoonal climate with a wet and dry season. The southwest monsoon is from mid-May to early October. The average annual mean temperature is 25 °C.	Lowlands show tropical monsoonal climate with a Southwest monsoon (Jun-Sep) and a Northeast monsoon (Dec-Apr). Climate at 2,000-3,000 m is temperate while above 3,500 m is the alpine zone.	Climatic conditions vary depending on altitude. Average temperature drops 6°C for every 1,000 m rise. Nepal has four seasons: Spring (Mar-May) with temperatures around 22°C, Summer (Jun-Aug), which is the monsoon period with temperatures around 30°C, Autumn and Winter (Dec-Feb) where night temperatures may dip below zero.	Tropical monsoonal climate with four seasons. Winter (Dec-Feb), Spring (Mar–May) Monsoon period, (Jun-Sep), and the Retreating Monsoon (Oct-Nov). Average temperatures vary from a low of 2°C in January to an average daily high of 40°C in June. Northern highlands have a temperate climate.	Tropical monsoonal climate with two monsoonal periods. Northeast monsoon (Nov-Apr) and southwest monsoon (May-Oct).	Tropical monsoonal climate with two monsoon periods. Southwest (May-Sep), and Northeast (Dec- Feb). The average temperature of the lowlands ranges between 25-30 °C, which changes with altitude.

exposure to hazards. Exposure is related to hazard proximity. As a prevailing condition, vulnerability directly affects disaster preparedness, level of response, and recovery in a country.

"Capacity assessment through recognizing vulnerabilities and capabilities at the local level can lead to the formulation of effective disaster preparedness guidelines."

Paper No. 1227, 13th
World Conference on Earthquake Engineering[14]

Although the program "*Strengthening Capacity of Government and Local Humanitarian Organizations on Preparedness for Emergency Response*" is not focused on implementing interventions to reduce prevalent vulnerabilities, understanding the present situation across the six countries will help to reveal challenges that may emerge during efforts to enhance preparedness for emergency response. This synthesis report will provide a comparative examination of prevalent vulnerabilities across the six countries, while addressing them is the mandate of the Sustainable Development Goals (SDGs) initiative.

"Many of the SDGs are focused on issues that are underlying drivers of risk... Risk and resilience are at the heart of planning for achieving SDGs, because shocks and stresses can reverse years of efforts and investments in development achievements."

UNISDR (2017)
Words into Action Guidelines

Prevalent Vulnerability Index (PVI) reflects predominant vulnerability conditions based on exposure in prone areas, socioeconomic fragility, and lack of social resilience that provide a measure of direct, indirect, and intangible impacts of hazard events. The index is a composite indicator that provides a comparative measure of a country's pattern or situation.[15]

A system of indicators proposed by IDEA[16] for the Inter-American Development Bank (IDB) permits a systematic and quantitative benchmarking of each country during different time periods, which were initially used for the Latin Americas and the Caribbean between 1980-2008. They capture conditions for direct physical impacts from exposure and susceptibility (ES), indirect and, at times, intangible impacts due to socio-economic fragility (SF), and lack of resilience to potential physical events. A 2016 review of the literature on vulnerability found this study on indicators to be exceptional.[21] Table 2 outlines the indicators.

Global Assessment Report 2009 (GAR, 09) observed that in addition to hazard severity and exposure, a range of other risk drivers related to economic and social development play a crucial role in configuration of disaster vulnerability and risk. Relevant proxy indicators for risk drivers include population density, Human Development Index (HDI), income, literacy, poverty, inequality, access to technology, and access to natural resources. The International Panel on Climate Change (IPCC) in the Fifth Assessment Report (AR5), states that differences in the levels of exposure and vulnerability between people and countries are linked to "non-climatic factors" and "multidimensional inequalities often produced by uneven development processes". This report, therefore, aims to study each country based on selected indicators that are aligned with the aforementioned PVI indicators (Table 3), providing an opportunity to compare prevalent vulnerability across the six target countries. The values have been extracted from the Human Development Report 2016, with the exception of

14 13th World Conference on Earthquake Engineering (2004), A Study on Community Disaster Response: A Way toward Vulnerability Reduction, Paper No. 1227.

15 Cardona, O. & Carreño, M. (2013). System of indicators of disaster risk and risk management for the Americas: Recent updating and application of the IDB-IDEA approach. In J. Birkmann (Ed.), Measuring vulnerability to natural hazards (2nd ed.) (pp. 251 276). Tokyo: United Nations University Press.

16 Institute of Environmental Studies (IDEA in Spanish) of the National University of Colombia, Manizales.

the ICT Development Index (IDI). Country ranks refer to the status of the country in a ranking for 188 countries. Relevant references are also provided in the descriptive text following Table 3.

Table 2

Indicators for Prevalent Vulnerability Index (PVI)

Exposure and susceptibility, (ES)	
Population density	Imports and export of goods and services % GDP
Population below poverty of $1 USD per day PPP	Gross domestic fixed investment % GDP
Capital stock million $ USD/1000 km^2	Arable lands and permanent crops % land area
Socio-economic fragility (SF)	
Human Poverty Index (HPI)	Inflation, food prices annual %
Dependents as portion of working age population	Dependency of GDP of agriculture, annual %
Social disparity using Gini Index	Debt servicing % GDP
Unemployment as a % of the labor force	
Lack of resilience (LR)	
Human Development Index (HDI)	Insurance of infrastructure and housing % GDP
Gender Development Index (GDI)	Television sets per 1000 people
Expenditure on pensions, health, education %GDP	Hospital beds per 1000 people
Governance Index	Environmental Sustainability Index (ESI)

Table 3

Selected Indicators for Prevalent Vulnerability in Six Countries

Selected Proxy Indicator	Cambodia	Myanmar	Nepal	Pakistan	The Philippines	Sri Lanka
Demography						
Total Population Millions	15.6	53.9	28.5	188.9	100.7	20.7
% Urban Population	20.7%	34.1%	18.6%	38.8%	44.4%	18.4%
% Population in LECZ	23.87%	25.78%	0%	2.94%	17.7%	11.79%
Dependency ratio (0 -14 yrs.)	49.2	41.1	52.9	57.9	50.3	37.2
Dependency ration (65 and older)	6.4	8	9	7.4	7.2	14.1
Human Development						
Human Development Index (HDI)	0.563	0.556	0.558	0.550	0.682	0.776
HDI Rank	143	146	144	148	114	72
Category of development	Medium	Medium	Medium	Medium	Medium	High
Gender Equality						
Gender Inequality Index (GII)	0.479	0.374	0.497	0.546	0.436	0.386
GII Rank	112	80	115	130	96	87
Gender Development Index (GDI)	0.892	N/A	0.925	0.742	1.001	0.934
Economy						
GDP per capita (2011 PPP$)	3,278	1,450	2,313	4,725	6,926	11,048
Remittance inflows % GDP	2.20%	4.99%	32.23%	7.15%	10.27%	8.5%
GNI per capita (2011 PPP$)	3,095	4,943	2,337	5,031	8,395	10,789
External debt stock % GNI	42.9%	10.2%	20%	23.9%	22.7%	59.7%

Income Disparity						
Gini coefficient	30.8	N/A	32.8	30.7	43	29
% population below poverty line	2.2%	N/A	15%	6.1%	13.1%	8.9%
Health						
Public health expenditure % GDP	1.3%	1%	2.3%	0.9%	1.6%	2%
Education						
Education Index (EI)	0.459	0.410	0.452	0.395	0.637	0.752
Country rank EI	153	167	148	169	107	57
Expenditure on Education % GDP	2%	N/A	4.7%	2.5%	3.4%	1.6%
Primary school enrolment % primary age group	116%	100%	135%	94%	117%	101%
Primary dropout rate %	53.1%	25.2%	29.9%	20.4%	24.2%	1.8%
Mean years of schooling female	3.7	4.9	3.2	3.7	9.5	10.3
Adult literacy rate	77.2	93.1	64.7	58.7	96.3	92.6
Communication						
ICT Development Index (IDI)*	3.12	2.54	2.50	2.35	4.28	3.77
IDI country rank	125	140	142	146	107	116
Internet users % population	19	21.8	17.6	18	40.7	30
Mobile phone users per 100	133	76.7	96.7	66.9	118.1	112.8
Environment						
Forests % land area	53.6%	44.5%	25.4%	1.9%	27%	33%
Natural resources depletion % GNI	2.3	3.9	5.8	2.7	1.7	0.5

* http://www.itu.int/net4/ITU-D/idi/2016/

Population

Of the six target countries, Pakistan has the highest population with 188.9 million people followed by the Philippines with 100.7 million. The population in Myanmar is 53.9 million, followed by Nepal with 28.5 million, and Sri Lanka with 20.7 million. Cambodia has the lowest population with 15.6 million.

Urban areas are more densely populated and hazard impact calls for a higher level of response in urban areas. The Philippines has the highest percentage of urbanization followed by Pakistan, Myanmar, Cambodia, Nepal, and Sri Lanka. The UN Population Division's World Urbanizations Prospects Report estimated that the level of urbanization in Cambodia will increase from 21% in 2014 to 36% by 2050.[17] In Myanmar, there has been a 26% rise in the urban population since 2000.[18] As the industrialization of Myanmar continues, it is estimated that 10 million non-agricultural jobs will be generated, creating incentives for more people from the rural areas to migrate to urban centers.[19]

17 United Nations, Department of Economic and Social Affairs, Population Division (2014). World Urbanization Prospects: The 2014 Revision, Highlights (ST/ESA/SER.A/352).
18 World Bank, http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?end=2015&start=2000
19 McKinsey Global Institute. Myanmar's Moment: Unique Opportunities, Major Challenges, 2013

In Nepal, the population growth rate has declined, credited to both a decline in fertility and the emigration of youth. Based on a calculation performed by the Population Council, Nepal will become an ageing society around year 2028, just 10 years from now (2018). Currently it has the second highest old age dependency ratio per 100 people between 15-64 years. The proportion of the working-age population is expected to decrease, and there will be an increase in the dependency ratio of the aged population on the working population.[20] The size of urban population is contested in Nepal, as the government continues to declare new municipalities without adherence to strict criteria.[21]

Pakistan envisages an increase in the current urban population of 32.5% to 49.45% by 2030.[22]

In the Philippines, by 2050, the number of urban dwellers is projected to increase to 102 million people, which is approximately 65% of the total population.[23] It is predicted that Sri Lanka's current urban population of 21.1% will increase to 70% by 2030.[24] Sri Lanka also has the highest old age dependency. By 2041, one out of every four people in Sri Lanka is expected to be elderly, making Sri Lankans the oldest population in South Asia.[25] This will add to the mounting pressure on the productive population of Sri Lanka, and is likely to impact household purchasing power, savings, and coping capacity in the face of disasters.

"As the urban sprawl of rapid urbanization expands outwards and upwards, it provides ready opportunities for hazards such as floods, storms and earthquakes to wreak havoc. Half the world's population now lives in urban areas, and that figure is estimated to rise (to) 70% by 2050. That's a lot of vulnerable and exposed people given that urban floods will represent the lion's share of total flood impact because of infrastructure, institutions and processes that are not yet up to the task ahead."

Margareta Wahlstrom, UNISDR[26]

Populations in the Low Elevation Coastal Zone (LECZ) are also subject to higher vulnerability. LECZ is derived from a Digital Elevation Model (DEM) by selecting all land contiguous with the coast that is 10 meters or less in elevation. Zonal statistics are generated for urban, rural, and total population as well as land area for the country as a whole and within the LECZ.[27]

Out of the six target countries, Myanmar has the highest percentage of LECZ population (25.78%) followed by Cambodia (23.87%), the Philippines (17.7%), Sri Lanka (11.79%) and Pakistan (2.95%). Their level of vulnerability from tsunamis, cyclones/typhoons, storm surges, and coastal inundation is relatively higher. Populations in coastal Asia, are predicted to suffer the most from extreme weather patterns over the next 50 years.[28] The location of human settlements provide insights into their vulnerability to different hazards, and their geographic profile provides a localized context for formulating response strategies.

20 NPC (2017) ***Demographic Changes in Nepal: Trends and Policy Implications***, Kathmandu: National Planning Commission and UNICEF
21 CBS (2014) ***Population Monograph of Nepal***, Volume III, Kathmandu: Central Bureau of Statistics.
22 https://www.aup.edu.pk/sj_pdf/Urbanization%20trend%20and%20rban%20population%20projections%20of%20pakis.DOC.pdf
23 http://documents.worldbank.org/curated/en/963061495807736752/Philippines-Urbanization-review-fostering-competitive-sustainable-and-inclusive-cities
24 The World Bank, Sri Lanka's Demographic Transition: Facing the Challenges of an Aging Population with Few Resources. September 2012
25 The World Bank, Sri Lanka's Demographic Transition: Facing the Challenges of an Aging Population with Few Resources. September 2012.
26 https://www.unisdr.org/archive/27965
27 https://unstats.un.org/unsd/environment/Proportion_Population_CoastalZones.htm
28 https://phys.org/news/2016-04-asias-coasts-extreme-eather.html#jCp

The Human Development Index (HDI)

HDI is a metric to assess the social and economic development levels of countries, using mean years of schooling, expected years of schooling, life expectancy at birth, and gross national income per capita. It ranges from zero to one (0-1). Higher values indicate higher development. Sri Lanka with a value of 0.776 is ranked 72nd out of 188 countries and is in the "high" category in terms of human development. The rest of the target countries, the Philippines, Cambodia, Nepal, Myanmar, and Pakistan, fall into the "medium" category following that order from greatest to least.

The Gender Inequality Index (GII)

The GII shows the loss in potential human development due to disparities between female and male achievements in reproductive health, empowerment, and the labor market. GII ranges from zero to one (0-1) with higher values reflecting higher inequality. Myanmar (0.374) has the lowest GII value out of the six countries, followed by Sri Lanka (0.386), the Philippines (0.436), Cambodia (0.479), Nepal (0.497), and Pakistan (0.546).

The Gender Development Index (GDI)

GDI is the ratio of the HDIs calculated separately for females and males. It is a direct measure of the gender gap. GDI ranges from zero to one (0-1), with higher values demonstrating a smaller gap. The Philippines had the highest value (1.001), with Sri Lanka (0.934), Nepal (0.925), Cambodia (0.82), and Pakistan (0.742) following in that order. The GDI for Myanmar is unavailable. Gender equity commands inclusiveness and equal access to humanitarian aid.

In Cambodia, the strategic plan *Neary Rattanak* (NR) is the strategic framework and plan to achieve gender equality. It was developed by the Ministry of Women's Affairs (MoWA) and is renewed every five years.

In Myanmar, the Ministry of Social Welfare, Relief and Resettlement, the leading ministry for implementing women's advancement and empowerment, adopted the National Strategic Plan for the Advancement of Women 2013-2022. The plan includes 12 critical areas aligned with the Beijing Platform for Action 1995.[29]

The Constitution of Nepal 2015 addresses the rights of women, and includes rights to lineage, rights to safe maternity and reproduction, rights against all forms of exploitation, and equal rights in family matters and property. The Government of Nepal is also working to incorporate gender equality in all development policies and programs, including developing a gender responsive budget system. However, progress made in specific fields has not yet contributed to the overall improvement in girls' and women's lives across the country.[30]

The Pakistan National Policy Guidelines for Vulnerable Groups in Disaster (2014) describes detailed steps to be taken related gender-sensitive programming and gender mainstreaming during disasters.[31]

The Philippines has the narrowest gender gap in Asia.[32] The country's Magna Carta of Women (MCW) mandates non-discriminatory and pro-gender equality and equity measures to enable women's participation in the formulation, implementation, and evaluation of policies, plans, and at all levels of development. Additionally, the Philippine Framework Plan for Women (FPW) identified actions planned for gender responsive governance to be undertaken by local government agencies (LGUs) and civil society.[33] Women in the Philippines generally have higher levels of education, life expectancy,

29 https://www.adb.org/documents/gender-equality-and-womens-rights-myanmar-situation-analysis
30 http://blogs.worldbank.org/endpovertyinsouthasia/long-road-gender-equality-nepal, (2017).
31 https://reliefweb.int/sites/reliefweb.int/files/resources/gcc_policy.pdf
32 https://www.philstar.com/headlines/2017/11/02/1754927/philippines-still-tops-gender-equality-asia-falls-3-notches-world-ranking#ABPw7DxueHxoQt2t.99
33 http://www.pcw.gov.ph/focus-areas/gender-responsive-governance/initiatives

and years of schooling compared to their male counterparts. However, women hold only 27.1% seats in parliament. There is also inequality in the participation of women in the labor market.[34] Men have significantly higher levels of income.[35]

Sri Lanka is implementing Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW). Moreover, a chapter on women's rights has been included in the National Human Rights Action Plan (2017-2021) to address issues such as law reforms, war affected women, employment, and enhancing institutional mechanisms.[36] An Independent Commission for Women is expected to be established through the Constitutional Council, aimed at enabling women in Sri Lanka to lodge complaints directly to the commission. The proportion of female participation and representation in public institutions and politics in Sri Lanka remains low and is below the global average of 24% compiled by the Inter Parliamentary Union[37],[38]. From 1989 to 1994 women comprised 5.8% of parliamentarians, and by 2014 the proportion had only marginally increased to 6.8%.[39] According to the Sri Lanka Labor Force Survey, unemployment among females stood at 7%, compared to 2.9% for males[40].

There are five GDI groups that are based on the absolute deviation of GDI from gender parity. For this scale, the lower the group, the lower the gap between women and men in terms of HDI achievements. Philippines belongs to Group 1, Sri Lanka to Group 3, Nepal to Group 4, and Cambodia and Pakistan to Group 5 according to 2015 rankings. Data for Myanmar is unavailable.[41]

Economy

According to the International Monetary Fund (IMF),[42] greater vulnerability to disasters is associated with lower investment, lower GDP per capita, higher poverty, and a more volatile revenue base. Economic stability would help to facilitate political will towards a higher financial allocation for disaster risk management.

Low-income countries (LICs) show high economic vulnerability to disasters. Damages to assets, public infrastructure, and long-term productivity as a result of disasters can set back development and erode gains in poverty alleviation.[43]

Sri Lanka has the highest GDP per capita (Table 3) followed by the Philippines, Pakistan, Cambodia, Nepal, and Myanmar. According to the World Bank classification based on the Gross National Income (GNI) per capita, Cambodia, Myanmar, Pakistan, the Philippines, and Sri Lanka fall into the lower-middle-income group, while Nepal falls into the low-income group.[44]

Higher values of external debt stock (expressed as a percentage of gross national income (GNI) deter allocation of additional funds for DRM. Sri Lanka has the highest debt stock followed by Cambodia, Pakistan, the Philippines, Nepal, and Myanmar.

In developing countries, economic vulnerability to floods and droughts is mostly due to the degree of reliance on agriculture and fishery sectors. Poorer communities are typically more dependent on natural capital and climate-sensitive sectors, like agriculture and fisheries which are more vulnerable to disaster and climate change impacts. Immediate disaster loss

34 http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/PHL.pdf
35 http://hdr.undp.org/en/composite/GDI
36 http://www.colombopage.com/archive_17A/Mar19_1489937864CH.php
37 http://archive.ipu.org/wmn-e/world.htm
38 Demographic Dividend, op.cit.
39 MDGR 2014, op.cit.
40 Department of Census and Statistics, 2016. Sri Lanka Labour Force Survey - Annual Bulletin. Retrieved from: http://www.statistics.gov. lk/samplesurvey/LFS_Annual%20Bulletin_2016.pdf
41 http://hdr.undp.org/en/composite/GDI

42 https://www.imf.org/external/np/pp/eng/2016/110416.pdf
43 http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2014/03/PP-disaster-resilience-post-2015-development-goals-economics.pdf
44 https://datahelpdesk.worldbank.org/knowledgebase/articles/906519

of income and assets can push people further into poverty and threaten their security.[45]

Cambodia's agriculture sector contributes 33% of the country's GDP and employs 57% of the country's labor force.[46] The country's agriculture sector is reported to be highly vulnerable to impacts of climate change, exacerbated by droughts and floods.[47] Similarly, in Myanmar the agriculture sector contributes 32% of the country's GDP, 56% of employment, and 21% of exports. The most productive agricultural zones in Myanmar are in the areas most vulnerable to climate change.[48]

In Nepal the agriculture sector contributed 31% of the country's GDP in 2015-2016.[49] According to the Central Bureau of Statistics (CBS) of Nepal, over the last decade, around 30,845 hectares of land owned by nearly 5% of households became uncultivable due to climate-related hazards.

In Pakistan, agriculture constitutes the largest sector of the economy. It accounts for half of the employed labor force and is the largest source of foreign exchange earnings. The effects of climate change on agriculture and other natural resources vary across the diverse agro-ecological regions.[50]

In the Philippines, the agriculture sector contributed 9.65% of the GDP in 2016.[51] Agricultural losses due to extreme weather events have reached record-highs in recent years.[52] In Sri Lanka, the agriculture sector contributed 8.21% of the GDP in 2016.[53] Vulnerability to climate change is predicted to show variation across geographical locations.[54]

Poverty and Income Disparity

Levels of poverty and income disparities dictate the ability to recover and build back better.

All six countries have achieved substantial progress in poverty reduction under the Millennium Development Goals (MDGs) initiative. However, Nepal has the highest level of population living below the poverty line at 15%, followed by the Philippines at 13.1%, Sri Lanka at 8.9%, Pakistan at 6.1%, and Cambodia at 2.2%.

Income disparity reflected in the Gini Coefficient is highest in the Philippines at 43%, followed by Nepal at 32.8%, Cambodia at 30.8%, Pakistan at 30.7%, and Sri Lanka at 29%.

The percentage of the population living below the poverty line and income disparity is not available for Myanmar.

Health

Nepal has the highest budget allocation for health at 2.5% of the country's GDP. Sri Lanka allocates 2%. The other countries follow with the Philippines at 1.6%, Cambodia at 1.3%, Myanmar at 1%, and Pakistan at 0.9%. In Cambodia and Myanmar, the health systems face the double burden of communicable diseases partnered with a growing epidemic of non-communicable diseases (NCDs). NCDs are already the largest cause of mortality in Cambodia,[55] and 59% of mortality in Myanmar is due to NCDs.[56] In Nepal, despite considerable progress under the MDGs, the country faces the challenge of reducing geographical disparities in health services. In countries where child malnutrition is high, lower impact persistent disasters have been

45 http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2014/03/PP-disaster-resilience-post-2015-development-goals-economics.pdf
46 http://sdwebx.worldbank.org/climateportalb/doc/GFDRRCountryProfiles/wb_gfdrr_climate_change_country_profile_for_KHM.pdf
47 Journal of Environmental Science and Management 17(2): 78-91 (December 2014)
48 https://www.adb.org/sites/default/files/publication/177652/ewp-470.pdf
49 Economic Survey Report Nepal 2017
50 http://www.pbs.gov.pk/content/agriculture-statistics
51 https://www.theglobaleconomy.com/Philippines/Share_of_agriculture/
52 Juan M. Pulhin and Maricel A. Tapia (2016), Vulnerability and Sustainable Development: Issues and Challenges from the Philippines' Agricultural and Water Sectors, Sustainable Development and Disaster Risk Reduction, Springer, pp 189-206
53 https://www.theglobaleconomy.com/Sri-Lanka/Share_of_agriculture/
54 F. Niranjan , N.P.C. Uddika , M.C.S. Bantilan and N.P. Singh., (2015), Assessing agricultural vulnerability to climate change in Sri Lanka, Sri Lanka Journal of Food and Agriculture , 1(1): 85-92
55 Cambodia Health Strategic Plan 2016-2020
56 http://www.who.int/nmh/countries/mmr_en.pdf

exacerbating the health situation.[57] Sri Lanka, Nepal, and Pakistan all have critical levels of malnutrition (i.e., higher than 30% in the 1-5 year age group), while Cambodia, Myanmar and the Philippines fall within the high level category (i.e., 20-29%).[58] Malnourished children are more vulnerable, particualrly during and after disasters, and malnutrition can have lasting effects into adulthood.

Education

New insights into the role of education found that educated individuals anticipate disaster risks without having to be affected by a disaster first. Education has also been shown to increase preparedness actions.[59] Education can directly influence risk perception, skills and knowledge, and indirectly reduce poverty, improve health, and promote access to information and resources. Hence, when facing natural hazards or climate risks, educated individuals, households, and societies tend to be more adaptive in their response to, preparation for, and recovery from disasters.[60]

The Education Index of a country is measured by the adult literacy rate (with two-thirds weighting) and the combined primary, secondary, and tertiary Gross Enrollment Ratio (GER) (with one-third weighting). The adult literacy rate gives an indication of the ability to read and write, while the GER gives an indication of the level of education. Globally, Australia has the highest ER at 0.939. Sri Lanka ranks 57th with an EI of 0.752. The Philippines ranks 107th with an EI value of 0.637. Nepal ranks 148th with an EI of 0.452. Cambodia follows at 153rd with an EI of 0.459. Myanmar is ranked 167th with an EI of 0.410, and Pakistan is ranked at 169th with an EI of 0.395.

Out of the six countries included in this report, the adult literacy rate is highest in the Philippines at 96.3, followed by Myanmar at 93.1, Sri Lanka at 92.6, Cambodia at 77.2, Nepal at 64.7, and Pakistan at 58.7%. Expenditure on education is highest in Nepal at 4.7% of the GDP. The Phillipines comes in second at 3.4%, followed by Pakistan at 2.5%, Cambodia at 2%, and Sri Lanka at 1.6%. Myanmar data for 2012 was 1.46%, however, data for later years is unavailable.

Primary school enrollment is highest for Myanmar at 135% as a % of the primary age population followed by the Philippines at 117%, Pakistan at 116%, Sri Lanka at 101%, Nepal at 100%, and Pakistan at 94%. The primary drop-out rate is highest in Cambodia at 53.1%, followed by Nepal at 29.9%, Myanmar at 25.2%, the Philippines at 24.2%, Pakistan at 20.4%, and Sri Lanka at 1.8%.

In Cambodia, poverty pushes many students out of school. Many parents, especially in rural areas, cannot afford the direct and indirect costs related to education, and families often require children to help at home with household duties and farming. Challenges multiply for children in rural and remote regions, especially for ethnic minorities who lack access to consistent, quality education.[61] Students from economically disadvantaged families, and girls in particular, have limited opportunities to access and complete higher education.[62]

In Myanmar primary school dropout rates (% of primary school cohort) fell gradually from 44.8% in 2000, to 25.2% in 2015. The reason for dropouts is partially due to the low uptake of pre-primary education in the country, a proven means of smooth transition into the formal education system.[63] In Nepal, children in remote

57 Children and Disasters: Understanding Impact and Enabling Agency (2011) https://reliefweb.int/sites/reliefweb.int/files/resources/full%20report_71.pdf
58 http://www.who.int/nutgrowthdb/2018-jme-brochure.pdf?ua=1
59 Hoffmann, Roman and Muttarak Raya, (2017), Learn from the Past, Prepare for the Future: Impacts of Education and Experience on Disaster Preparedness in the Philippines and Thailand, World Development
Volume 96, Pages 32-51., https://www.sciencedirect.com/science/article/pii/S0305750X15312559
60 Muttarak, R. and W. Lutz. 2014. Is education a key to reducing vulnerability to natural disasters and hence unavoidable climate change? Ecology and Society 19(1): 42. http://dx.doi.org/10.5751/ES-06476-190142
61 https://www.unicef.org/cambodia/3.Education.pdf
62 Chea Nich (2015) Higher Education in Cambodia, MA Thesis, Goteborgs University, https://gupea.ub.gu.se/bitstream/2077/39995/1/gupea_2077_39995_1.pdf
63 https://myanmar.savethechildren.net/what-we-do/education

areas face difficulty accessing schools, leading to absenteeism. Low achievements also lead students to drop out of school.[64]

In Pakistan, students' socioeconomic status, difficulties in learning, class repetition, lack of interest in studies, unfriendly schools, lack of basic facilities in school, and teachers' hostile attitudes with students were the reported causes of school drop outs.[65] Enrollment of boys continues to exceed the number girls at every level of education throughout the country.[66]

In the Philippines, the number of out-of-school youth both in primary and secondary levels, has been associated with poverty.[67] Females have a higher tendency to stay in school compared to males, but few are given the opportunity to attend high school.[68] In Sri Lanka, the dropout rate is low. Those that do occur are more likely to be from the tea estate sector than rural and urban areas, as well as from poorer families with no exposure to pre-primary school. Gender is not a significant factor in non-attendance in Sri Lanka.[69]

Communication

The Asia Pacific region, where the six target countries of the program are located, is the world's most disaster-prone region.[70] New communication technologies can help to solve challenges related to early warning and its dissemination, risk assessment, emergency management, rapid need analysis and climate change, and monitoring.[71] Understanding and disseminating spatial observations, circulating climate outlooks, real-time tracking of disasters, and the use of unmanned aerial vehicle (UAV) for rapid impact assessment are just a few of the emerging advantages that will help build capacity and preparedness for disaster response. A future generation equipped with information and communications technology (ICT) resources is an essential component for combating climate change and the predicted increase in frequency and exacerbation of impacts from climate-related hazards.

However, according to the Measuring the Information Society Report (2017),[72] Asia Pacific is the most heterogeneous region in terms of ICT development. To harness ICT benefits, countries must create conditions that support the deployment of next-generation network and service infrastructures. Policies that are conducive to experimentation and innovation, while also mitigating potential risks to information security, privacy, and employment are also required.

The Philippines has the highest ICT Development Index (IDI) at 4.28 (on a scale of 1-10) and is ranked 107 out of 176 countries. Sri Lanka follows with an IDI of 3.77 and country rank of 116. Next is Cambodia with an IDI of 3.12 and country rank 125, followed by Myanmar with an IDI of 2.54 and country rank 140, Nepal with an IDI of 2.50 and country rank 142, and Pakistan with an IDI of 2.35 and country rank 146.

In terms of mobile phone use per 100 users, Cambodia leads with a value of 133, followed by the Philippines at 118.1, Sri Lanka at 112.8, Nepal at 96.7, Myanmar at 76.7, and Pakistan at 66.9. Sri Lanka offers a good example for using ICT for early warning. The Disaster Management Centre (DMC), together with Dialog (Vendor of ICT services) and with University of Moratuwa as their research partner, launched the Disaster Emergency Warning Network (DEWN) in 2009 after completing a successful pilot period. DEWN is a mass alert early warning system that uses

64 http://www.npc.gov.np/images/category/MDG-Status-Report-2016_.pdf
65 https://www.amazon.com/Causes-Primary-School-Dropout-Pakistani/dp/3847319833
66 https://www.dawn.com/news/1241630
67 https://www.philstar.com/headlines/2017/06/25/1713711/number-elementary-high-school-dropouts-rising-lawmaker
68 http://www.gmanetwork.com/news/scitech/science/534610/a-look-at-dropout-rates-in-the-philippines/story/
69 https://www.unicef.org/education/files/Sri_Lanka_OSS_Summery.pdf
70 http://www.unescap.org/sites/default/files/2015_Year%20in%20Review_final_PDF_1.pdf
71 https://www.preventionweb.net/files/47520_ictfordisasterriskmanagement.pdf
72 https://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-ICTOI-2017-SUM-PDF-E.pdf

Global System for Mobile (GSM) communication technologies and devices, and transmits alerts through the GSM network. It can be used to issue customized alerts to selected recipients instantaneously and is compliant with the internationally accepted common alerting protocol (CAP)[73]. It also provides cell broadcasts of early warning messages to mobile phones, which is not affected by heavy congestion of mobile services during disaster events.[74]

Environment

A considerable amount of research has been conducted on the use of ecosystem-based approaches for disaster risk reduction and climate change adaptation. Evidence from the Asia Pacific region demonstrates that forests, when appropriately planned and managed, can withstand and protect against natural disasters of varying types and degrees. Coastal forests can reduce the destructive power of tsunamis with wave heights up to 8–10 meters, by absorbing wave energy through stabilizing sand dunes and other elevated wave barriers along coasts. Forests and forest soils are capable of reducing runoff at small and medium scales for shorter-duration rainfall events, due to enhanced interception, infiltration, and storage capacities relative to grasslands and bare lands. Evapotranspiration from forests also serves to reduce soil moisture content below than that achieved by other vegetation types, creating a more substantial buffer against flooding when rainfall events occur.[75] Vegetation can also contribute to stabilization of slopes for prevention of landslides.

Forest reserves are significant natural assets for carbon equity, which was considered as one of the thrust areas in the Rio Conventions.

According to Table 3, Cambodia has the highest forest coverage as a percentage of total land area at 53.6%, followed by Myanmar with 44.5%, Sri Lanka with 33%, the Philippines with 27%, Nepal with 25.4%, and Pakistan with 1.9%. The natural resources depletion is highest in Nepal, followed by Myanmar, Pakistan, Cambodia, the Philippines, and Sri Lanka in that order. The perception that Nepal is facing an ecological crisis due to deforestation on steep slopes and subsistence farming is a controversial topic and has raised much debate. According to the studies, ecological deterioration has also been attributed to the uncontrolled influx of visitors in ecologically fragile regions.[76]

Myanmar had the third-highest annual rate of forest reduction globally, just behind deforestation-plagued Brazil and Indonesia, according to the Global Forest Resources Assessment 2015.[77] In Pakistan, the mountainous areas are under severe pressure of degradation due to various anthropogenic activities.[78] The International Symposium on Flood-Pulse Ecosystems, Siem Reap, Cambodia (2018) expressed concern about the deterioration of the Tonle Sap ecosystem due to human activity in Cambodia on which millions depend for food and irrigation. With growing populations, all six countries face the threat of natural resource depletion, which may cause challenges to livelihood sustainability of the rural populations who depend on natural capital.

73 https://www.dialog.lk/browse/aboutPromo.jsp?id=onlinefld70046
74 https://www.wmo.int/pages/prog/amp/pwsp/documents/CAPWKSHP-2014-01-07-DMC.pdf
75 http://www.cid.org.nz/assets/Key-issues/Enviroclimate-change/2013-Forest-and-natural-disaster-risk-reduction.pdf
76 Koirala, Hriday Lal, (2017), Myth and reality of the eco-crisis in Nepal Himalaya, Geographical Journal of Nepal Vol. 10: 39-54.
77 https://www.mmtimes.com/national-news/16436-myanmar-third-worst-for-deforestation-rate-says-un.html
78 https://juniperpublishers.com/ijesnr/pdf/IJESNR.MS.ID.555690.pdf

Hazards, Disaster, and Climate Risk of the Selected Countries

The Internationally Reported Database CRED EM - DAT[79] catalogues disaster data for events that qualify under the following criteria:

- Ten or more people reported killed
- One hundred or more people reported affected
- Declaration of a state of emergency
- Call for international assistance

These criteria allow for the measurement of drought impacts when deaths occur. However, droughts can have significant impacts on livelihoods and consequently on household income and capacity to recover, even without causing fatalities. Therefore, national and sub-national databases are important to monitor droughts and small-scale disasters not recorded in the EM-DAT.

According to UNISDR, the level of disaster loss is the ultimate indicator of success of public policy in disaster risk management. Fundamentally, if losses are increasing, then disaster risk management efforts are likely not as effective as possible. UNISDR recommends collecting data on the Annual Average Loss (AAL) as an indicator of disaster risk and resilience in order to highlight future losses that a country may experience.[80]

Table 4 provides a comparative snapshot of hazards, their frequency, and Annual Average Loss in the six target countries.

> AAL is the expected loss per annum associated with the occurrence of future perils, assuming a very long observation timeframe. While there may actually be little or no loss over a short period of time, the AAL also accounts for much larger losses that occur less frequently. As such, AAL is the amount of funds that need to be put aside annually in order to cumulatively cover the average disaster loss over time. It considers the damage caused on the exposed elements by small, moderate, and extreme events and results in a useful and robust metric for risk ranking and comparisons.
>
> Probabilistic risk assessment gives an overview of estimated losses, which can provide guidance to predict and plan for future losses. This information can be used to plan and prioritize investments and strategies for managing disaster risk.
>
> UNISDR[81]

Floods and epidemics

Floods and epidemics are prevalent in all six countries. AAL in Cambodia is constituted by flood loss at 100%. Floods contribute 92% to AAL in Myanmar, 86% in Sri Lanka, 82% in Nepal, 77% in Pakistan, and 6.5% in the Philippines.

In Cambodia, October 2011 was the worst flood season on the lower Mekong River since 2000. Floods swept across 17 of the country's 24 provinces killing 207 people and affecting 34,000 families.[82] Estimates indicate that the direct damage to assets and economic losses amounted to $624 million USD.[83]

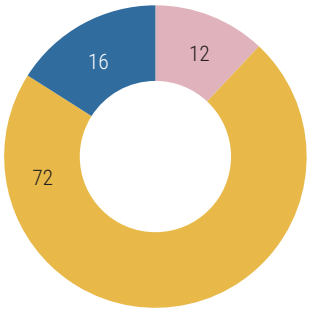
79 www.emdat.be Universitè catholique de Louvain Brussels - Belgium
80 www.unisdr.org/files/35716_newsystemofprogressindicatorsfordrr.pdf
81 https://www.preventionweb.net/english/hyogo/gar/2015/en/gar-pdf/GAR2015_EN.pdf
82 https://earthobservatory.nasa.gov/NaturalHazards/view.php?id=76212
83 https://www.adb.org/sites/default/files/linked-documents/46009-001-cam-oth-01.pdf

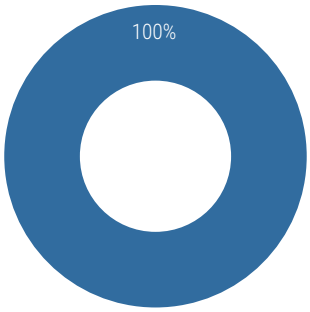
Table 4

Hazards, their Frequency and Annual Average Loss (AAL)

Hazards	Frequency (%)	AAL

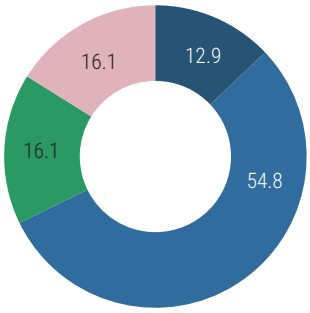
Cambodia
Droughts
Epidemics
Pest infestations
Floods
Fires
Landmines
River bank collapse
Typhoons

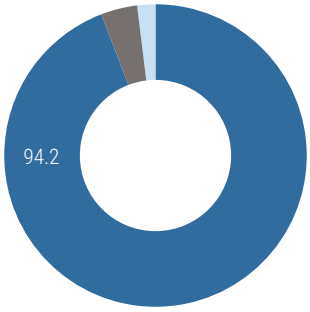




https://www.preventionweb.net/countries/khm/data/

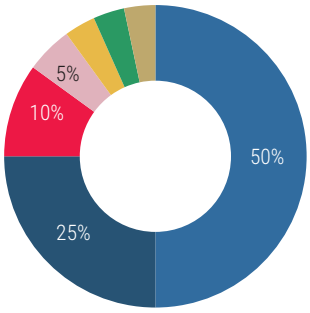
Myanmar
Cyclones
Droughts
Earthquakes
Fires
Floods
Forest fires
GLOF
Landslides
Storm surges
Tsunamis

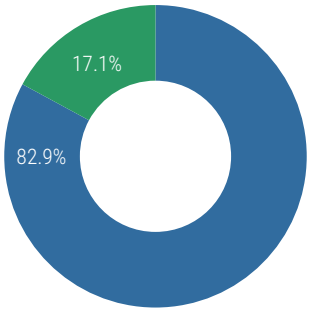


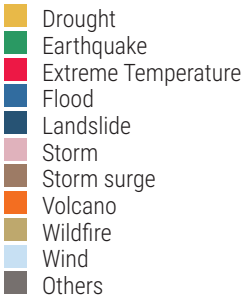


https://www.preventionweb.net/countries/mmr/data/

Nepal
Avalanches
Cold waves
Droughts
Earthquakes
Epidemics
Fires
Floods
GLOF
Heat waves
Landslides
Snow storms

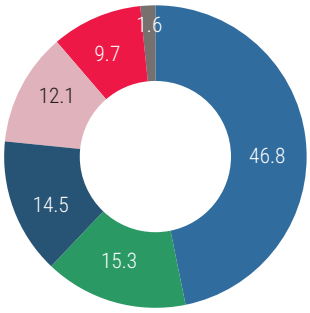


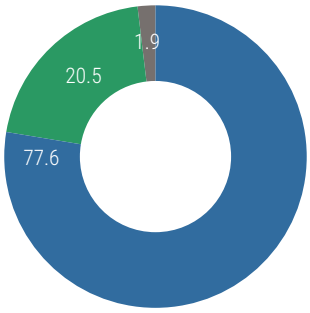




https://www.preventionweb.net/countries/npl/data/

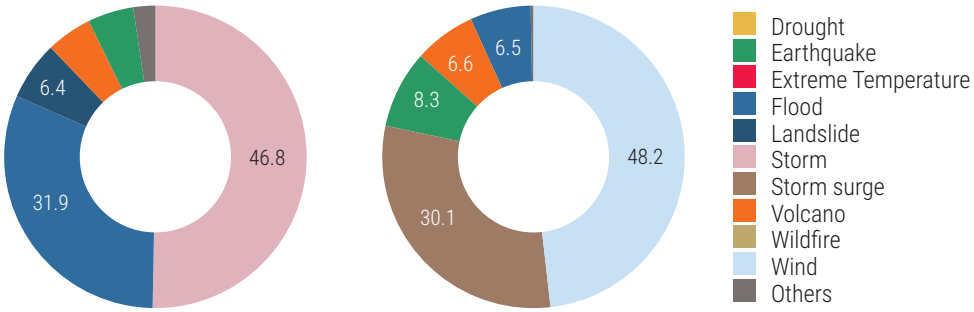
Pakistan
Avalanches
Cyclones
Droughts
Earthquakes
Floods
GLOF
Landslides





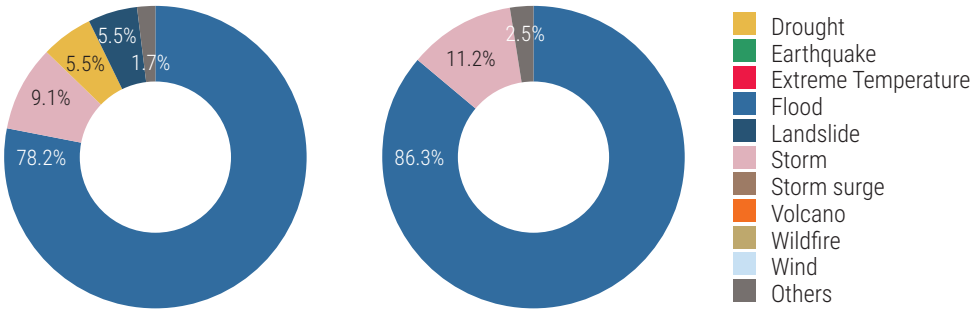
https://www.preventionweb.net/countries/pak/data/

The Philippines
Conflicts
Droughts
Earthquakes
Epidemics
Floods
Landslides
Tsunamis
Typhoons
Volcanoes



https://www.preventionweb.net/countries/phl/data/

Sri Lanka
Coastal erosion
Cyclones
Epidemics
Droughts
Floods
Human-elephant conflicts
Kidney disease
Landslides
Lightning
Tsunamis



https://www.preventionweb.net/countries/lka/data/

In Myanmar, according to the Relief and Resettlement Department (RRD), more than 91,000 people across 29 townships were affected by July 2017 floods.[84] In Nepal, the July 2017 floods and landslides resulted in 53 fatalities and affected nearly 1.7 million people. The Humanitarian Country Team launched a Joint Response Plan in August, seeking $41.4 million USD to provide immediate humanitarian assistance to 1.7 million people, comprising health, water sanitation and hygiene (WASH), food security, nutrition, shelter, livelihood, protection, education, and early recovery support for six months.[85]

In Pakistan, continuous heavy rain and record-breaking snowfall caused widespread flooding across three districts in Baluchistan in January 2017, which resulted in 13 deaths and 650 people injured. A total of 60,000 people were affected.[86] In September 2017, monsoon rains caused flash flooding in Karachi, Pakistan's largest city and claimed the lives of at least 16 people, most of them children. At least 11 deaths were attributed to electrocution, as rising waters energized the water in low-lying urban areas.[87]

In the Philippines, a tropical storm in December 2017 triggered mudslides and flash floods that killed more than 100 people, and left dozens missing.[88] In Sri Lanka, floods and landslides due to incessant rains in May 2017 across the country led to 200 deaths and affected over half a million people in seven districts. It is estimated that at least 150,000 women and girls of reproductive age and over 189,000 children were affected by the disaster. To complement the ongoing government-led response, the Humanitarian Country Team (HCT) sought $22.7 million USD

84 https://reliefweb.int/disaster/fl-2017-000091-mmr
85 https://reliefweb.int/disaster/fl-2017-000107-npl
86 https://reliefweb.int/report/pakistan/pakistan-balochistan-floodssnowfall-2017-emergency-plan-action-mdrpk013
87 https://edition.cnn.com/2017/09/01/asia/karachi-pakistan-flooding/index.html
88 https://www.reuters.com/article/us-asia-storm-philippines/more-than-100-dead-in-philippine-mudslides-flooding-officials-idUSKBN1EH05A

to address the critical life-saving and protection needs.[89]

Landslides

Landslide frequency is reflected in all five target countries except Cambodia. Riverbank collapse in Cambodia causes mudslides. However, landslides are not reflected in AAL as a category and falls into the 'other' category as indicated in Table 4.

Cyclonic winds

Cyclonic winds impact all countries except Nepal with accompanying storm surges.[90] However, in October 2014, Tropical Cyclone Hudhud that made landfall in Visakhapatnam, India led to a deadly blizzard in Annapurna, Nepal, an unusual disaster impact rarely associated with tropical cyclones. Twenty-seven people, including many foreigners, were confirmed dead, and at least 70 people went missing.

Cyclone (typhoon) impact is a significant contibutor to the AAL in the Philippies. AAL contribution is shown for Storms in Myanmar and storm surge in Sri Lanka. According to ThinkHazard[91] created by The Global Facility for Disaster Reduction and Recovery (GFDRR), there is more than a 20% chance of potentially-damaging wind speeds affecting Cambodia in the next 10 years. Typhoon Ketsana hit Cambodia in September 2009, and 14 out of 24 provinces were impacted by the storm. Subsequent flash floods affecting 49,000 families left 43 people dead and 67 severely injured. The total damage and loss caused by Typhoon Ketsana was estimated at $132 million USD.[92]

On May 2, 2008, Cyclone Nargis made landfall in Myanmar, devastating the Irrawaddy Delta region. According to official figures, 84,500 people were killed and 53,800 went missing. A total of 37 townships were significantly affected by the cyclone. The UN estimates that as many as 2.4 million people were affected. The damage was estimated at 68.5 million Swiss Francs.[93]

In Pakistan, during the last 100 years, a number of cyclonic storms have struck the coastal areas (1895, 1902, 1907, 1944, 1948, 1964, 1985, 1999, 2007 and 2010). Cyclones that make landfall in Pakistan lose much of their intensity by the time they reach country's coastline.[94]

In the Philippines, at least 20 typhoons make landfall every year. Typhoon Haiyan, known as Super Typhoon Yolanda that landed in 2013, was one of the strongest tropical cyclones ever recorded. It created 5-6-meter-high storm surges. The National Disaster Risk Reduction and Management Council (NDRRMC) confirmed 6,300 fatalities across the country. The Philippine Red Cross estimated that 22,000 people were missing. Total damages were estimated at $3.64 billion USD.[95]

In Sri Lanka, the eastern and north eastern parts are highly vulnerable to cyclones that develop in the Bay of Bengal during the months of November and December. The 1978, the country's most destructive cyclone was recorded, which killed approximately a thousand people, and affected more than one million people either by partially or completely damaging nearly 250,000 houses, and 240 school buildings. The government spent over LKR 600 million on emergency response.[96]

89 https://reliefweb.int/report/sri-lanka/sri-lanka-floods-and-landslides-emergency-response-plan-june-october-2017
90 http://www.ifrc.org/en/news-and-media/news-stories/asia-pacific/myanmar/myanmar-cyclone-nargis-2008-facts-and-figures/
91 http://thinkhazard.org/en/report/44-cambodia/CY
92 Cambodia Post-Ketsana Disaster Needs Assessment, 2010.
93 http://www.ifrc.org/en/news-and-media/news-stories/asia-pacific/myanmar/myanmar-cyclone-nargis-2008-facts-and-figures/
94 https://pakistanweatherportal.com/2011/03/31/history-of-cyclones-in-pakistan/
95 "Final Report RE: Effects of Typhoon "Yolanda" (Haiyan)"(PDF). NDRRMC. December 11, 2013.
96 "Disaster Information Management system in Sri Lanka". www.desinventar.lk.

Drought

Drought frequency is shown for Cambodia, Sri Lanka, and Nepal but is not reflected in AAL.

Due to the criteria on which EM_DAT is constructed, drought tends to get masked if no fatalaties occur. However, all six countries have suffered from drought impacts in the past.

In 2016, El Niño triggered the worst drought in decades in Cambodia, which led to water shortages for both human consumption and agriculture across the country. The National Committee for Disaster Management (NCDM) estimated that about 2.5 million people in Cambodia were affected across all provinces of the country.[97]

Myanmar was hit by a drought in 2010, which was the most severe in several decades. According to the Annual Drought Reports (2010-2013) prepared from Drought Monitoring Center of Department of Meteorology and Hydrology (DMH), the drought indices of Myanmar are showing rising trends especially in the country's dry zone. [98]

Western Nepal has experienced consecutive and worsening winter drought conditions since 2000, culminating in a severe drought episode during 2008/09.[99] Trend analysis using standardized precipitation index (SPI) and drought index (1981-2012) has shown an increase in both severity and frequency of drought and trend is stronger for longer drought time scales.[100]

In Pakistan, drought has been recorded for four consequent years (2014-2017) in Tharparkar district, Sindh province, resulting in harvest reduction by 34-53%, and livestock reduction by 48%.[101] More than 190 children have died and 22,000 have been hospitalized in Tharparkar district in 2016 because of drought-related waterborne and viral diseases.[102]

In the Philippines, El Nino triggered drought caused 5.32 billion Peso worth of damages to the agriculture sector by February 2016. Nearly 100,000 fishers were also affected due to fish kills and algal blooma called red tide.[103]

In Sri Lanka, an estimated 520,000 people across eight provinces were affected by drought, as of October 2016. During this drought, sixty schools were closed due to water shortages, affecting 26,000 children.[104] In 2018, up to 890,000 people were affected across 17 of the 25 districts, and 72 reservoirs under the jurisdiction of the Department of Irrigation have been reduced to 35% capacity.[105]

Earthquake

Earthquake frequencies have been recorded for Pakistan, Myanmar, Nepal, and the Philippines. Earthquakes contribute 20.5% to AAL for Pakistan, 17.1% for Nepal, and 6.6% for the Philippines. It is not reflected in AAL for Myanmar.

Although Cambodia is not earthquake-prone, due to its distance from the edges of volatile tectonic plates, the 6.8-magnitude earthquake in central Myanmar in September 2016 was so powerful that tremors were felt in Cambodia.[106] Over 60 moderate to strong earthquakes (5.3 to 6.3 on the Richter scale)[107] hit Myanmar in 2017, and 40 occurred in 2016. There has not been a mega earthquake (9 on the Richter scale) for more than 80 years, but cities that are situated

97 http://www.caritascambodia.org/index.php/cambodia-drought-emergency-appeal-2016
98 http://www.ais.unwater.org/ais/pluginfile.php/597/mod_page/content/79/Myanmar.pdf
99 https://journals.ametsoc.org/doi/full/10.1175/JCLI-D-12-00800.1
100 https://link.springer.com/article/10.1007/s11069-015-2055-5
101 https://reliefweb.int/report/pakistan/pakistan-situation-report-01-january-june-2016
102 https://reliefweb.int/report/world/global-emergency-overview-snapshot-10-16-february-2016
103 https://reliefweb.int/report/philippines/drought-and-dry-spell-hits-58-provinces-philippines
104 https://reliefweb.int/report/philippines/asia-and-pacific-weekly-regional-humanitarian-snapshot-11-17-october-2016
105 https://www.newsfirst.lk/2018/09/12/890000-people-affected-by-prevailing-drought/
106 https://www.phnompenhpost.com/post-property/time-rethink-earthquake-management-high-buildings-cambodia
107 https://pubs.usgs.gov/gip/earthq4/severitygip.html

in the Sagaing region and its surrounds need to be on alert.[108]

The April 2015 Nepal earthquake (also known as the Gorkha earthquake) killed nearly 9,000 people and injured nearly 22,000.[109] The earthquake triggered an avalanche on Mount Everest killing 21 people. It was the worst natural disaster to strike Nepal since the 1934 Nepal–Bihar earthquake.

Pakistan is one of the most seismically active countries in the world, being crossed by several major faults. Twenty-seven major earthquakes hit Pakistan between 2000-2018. The last was in January 2018, with a magnitude of 6.1.[110] In 2005, the 7.6 magnitude Kashmir earthquake killed 80,000 people and 3.5 million people were rendered homeless. In the Philippines, there have been 106 earthquakes between 1600 to 2015, with an average magnitude of more than 6.0.[111]

GLOF

According to International Centre for Integrated Mountain Development (ICIMOD), Nepal and Pakistan are vulnerable to glacial lake outburst floods (GLOF). Information on Myanmar glaciers is scarce but reports suggest that monitoring is also needed for this type of hazard in Myanmar.[112]

Other hazards

Tsunami

The December 2004 tsunami was a low probability high impact event that affected Myanmar and Sri Lanka out of the six program countries, and caused massive devastation, especially in Sri Lanka.

Wildfire

Cambodia, Myanmar, and Nepal report forest/wildfires. Forestfire season in Cambodia runs from January through March but can extend as late as May. In 2018, it reached its peak in February, when NASA's Earth Observatory witnessed up 1,868 active fires in Cambodia, compared to 217 in Thailand, 185 in Laos, 114 in Vietnam, and 77 in Myanmar. These are considered to be a product of both naturally occurring blazes as well as land clearing.[113] In Nepal, the wildfires are caused by long dry spells and windy conditions.[114]

Unexploded ordnance (UXO)

Unexploded ordnances (UXO) are a serious concern in Cambodia. Today, 40,000 people — one out of every 290 Cambodians — are amputees, with the vast majority being men, who are also the traditional heads of households. Even the most optimistic estimates in 1918 suggest Cambodia will not meet its UXO clearance goals for another five years.[115]

Pests and diseases

Every year, Cambodian farmers suffer agricultural production losses due to pests and disease outbreaks. Inadequate knowledge among farmers about how to handle these challenges, in tandem with climate change and flood, impacts aggravate the problem.[116]

CKDu

In Sri Lanka during the last two decades, chronic kidney disease of unknown etiology (CKDu) has emerged as a significant contributor to the burden of chronic kidney disease (CKD) in rural Sri Lanka. The prevalence of CKDu is as high as

108 Myanmar Earthquake Committee (MEC), 2018, https://www.mmtimes.com/news/fourteen-earthquakes-hit-myanmar-so-far-year.html
109 "Incident Report of Earthquake 2015". ***Nepal Disaster Risk Reduction Portal***. drrportal.gov.np.
110 https://www.dawn.com/news/1215521
111 https://www.rappler.com/science-nature/33807-map-strongest-earthquakes-in-ph
112 http://www.icimod.org/?q=24268
113 https://www.phnompenhpost.com/national/cambodia-tops-region-fires-detected-space
114 https://forestsnews.cifor.org/48187/nepals-forest-fires?fnl=en
115 https://www.huffingtonpost.com/michaela-haas/the-killing-fields-of-tod_b_2981990.html
116 https://ccafs.cgiar.org/blog/developing-pest-smart-farmers-cambodia#.WwjmoEiFPIU

22.9% in some districts, and studies have found an association with farming occupations.[117]

Potential of Nuclear Accident

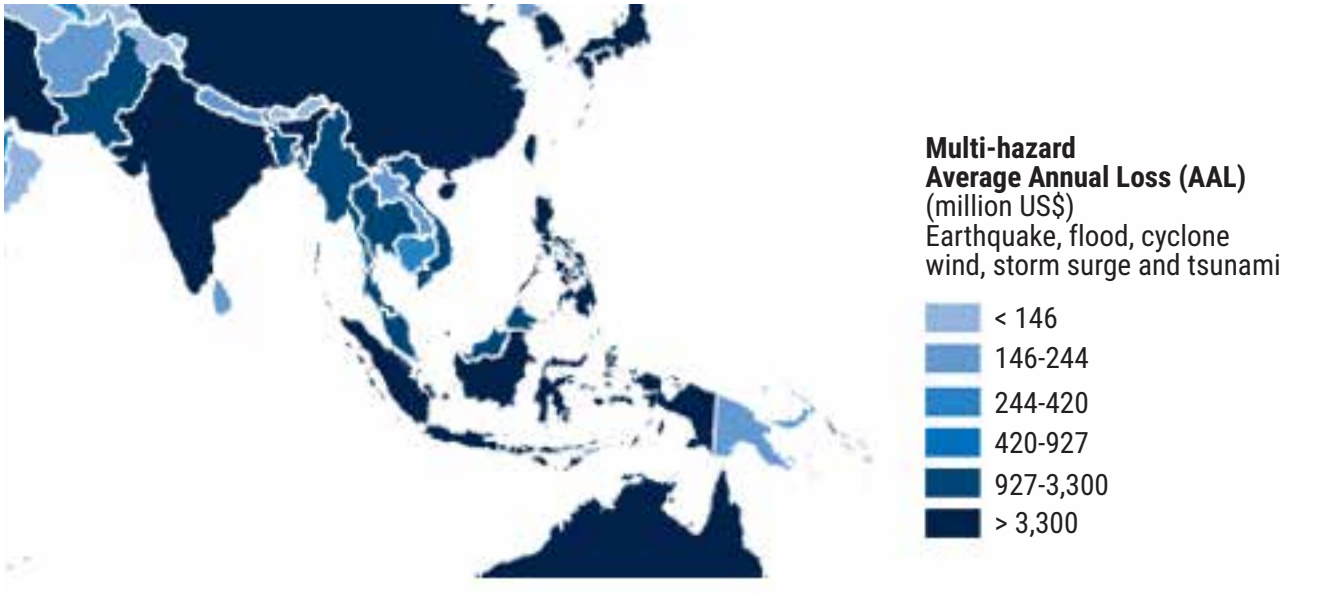
The SAARC region faces an emerging potential for a nuclear accident. The Kudankulam Nuclear Power Plant in Tirunveli district of Tamil Nadu in southern India raises concern for India and its neighbors. The first reactor of the plant attained criticality on July 13, 2013 and started commercial operation from December 31, 2014. Commercial operation of a second unit started on October 15, 2016.[118] Pakistan's Executive Committee of the National Economic Council in 2013 approved the construction of two 1100 MW reactors. The Bangladesh Power System Master Plan has approved the establishment of two 1000 MW nuclear plants by 2020.[119] Serious nuclear accidents have been few and far between—but their stories tell the potential for unexpected occurrences.

Comparative multi-hazard AAL

The Global Assessment Report 2015 (GAR15) has endorsed the use of AAL in assessing risk, and has produced a global multihazard risk indices for individual countries based on cyclone wind, earthquake, flood, storm surges, and tsunamis. Six categories have been introduced with gradually increasing AAL. An adoption for the Asia Pacific region is depicted graphically in Figure 2.[120]

According to Figure 2, the Philippines falls into the highest AAL category. Pakistan and Myanmar fall into the second highest category. Cambodia falls into the third highest category, while Nepal and Sri Lanka fall into the fifth category.

Figure 2 Comparative Multi-hazard AAL



Source: Adopted from Global Assessment Report

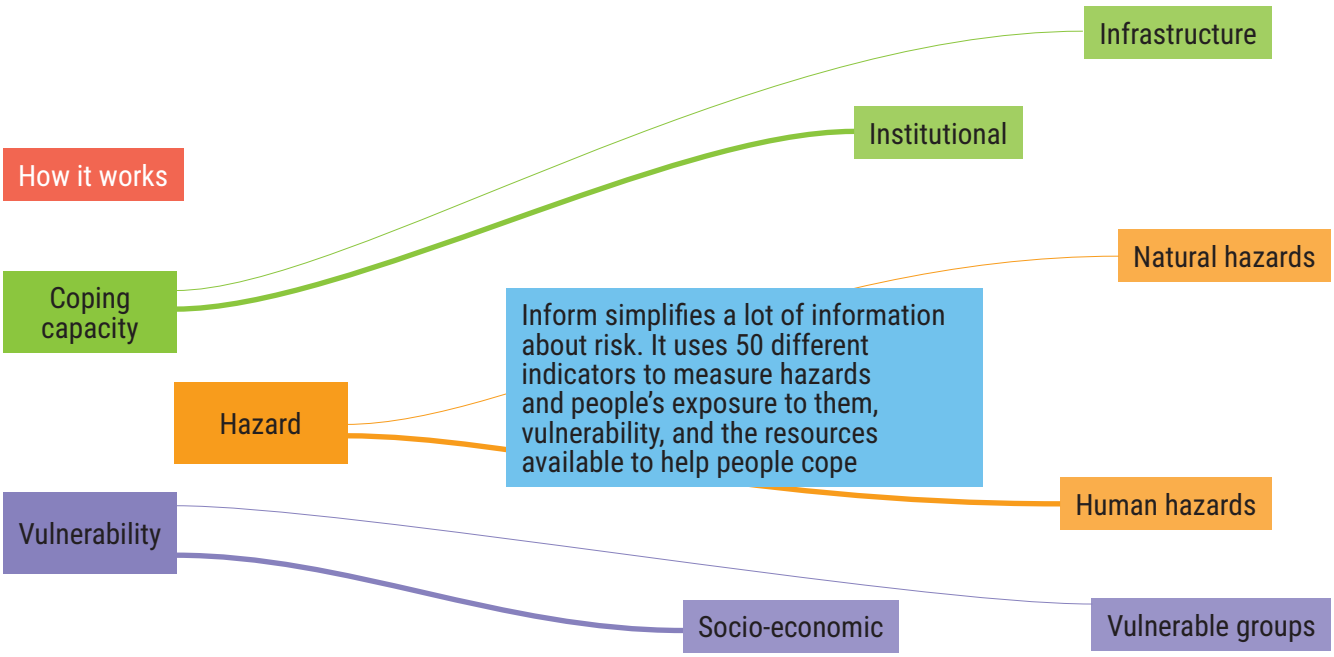
117 http://www.sciencedirect.com/science/article/pii/S0035920307001526

118 http://www.world-nuclear-news.org/NN-Kudankulam-II-project-launched-17101601.html

119 Begum, z. (2011). Status of Nuclear Activities of Bangladesh Atomic Energy Commission, 16th WIN-Global Conference, Marseilles, May

120 https://www.preventionweb.net/english/hyogo/gar/2015/en/gar-pdf/GAR2015_EN.pdf

Figure 3 Components of INFORM[122]



Inform creates a risk profile for every country. Each has a rating between 0 and 10 for risk and all of it's components, so it's easy to compare.

Source: Adopted from Global Assessment Report

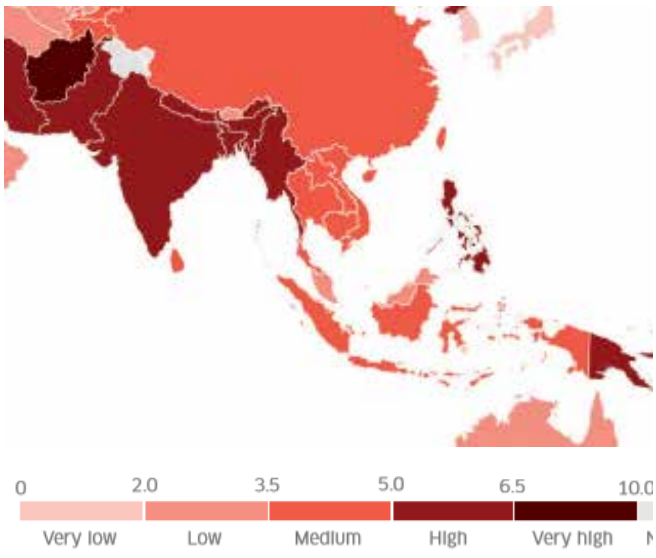
Index for Risk Management (INFORM 2018)[121]

INFORM is a way to understand and measure the risk of humanitarian crises and disasters and understand how the conditions that lead to them affect sustainable development. INFORM uses 50 indicators based on three dimensions of hazard and exposure, vulnerability, and lack of coping capacity. The index ranges from zero (low) to ten (very high). Figure 3 illustrates the components that go into formulating the risk index.

A graphical depiction of INFORM is depicted in Figure 4.

The highest value recorded by the index globally is 7.8. Myanmar, Nepal, Pakistan, and the Philippines fall into the "high" category, and Cambodia and Sri Lanka fall into the "medium" category. Myanmar and Pakistan show a value of

Figure 4 Mapping the Risk in the Region Using INFORM[123]



6.4, the Philippines records a value of 5.2, Nepal has a value of 5.1, followed by Cambodia with a value of 4.7, and Sri Lanka with a value of 4.

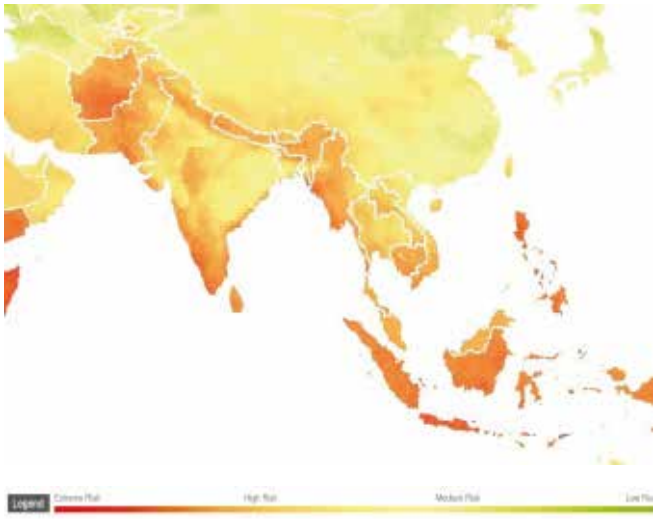
121 http://www.inform-index.org/
122 http://www.inform-index.org/Portals/0/InfoRM/2018/INFORM2018-WithCovers.pdf?ver=2018-03-02-142126-597
123 ibid

Climate Risk

The Glossary of the IPCC Fifth Assessment Report defines vulnerability to climate change broadly as, "*The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.*"

Figure 5 depicts the Climate Vulnerability for the SAARC and ASEAN countries adopted from the Verisk Maplecroft Climate Vulnerability Index (2016).

Figure 5 Climate Vulnerability Index[124]



While all six target countries are vulnerable to climate change, the Philippines shows the highest vulnerability. It should be noted that vulnerability can change over time and therefore the depiction must only be taken as a signal that the probability of extreme climate events may increase over time. Therefore, there may be a need to increase preparedness efforts for emergency response.

Legal and Institutional Arrangements for DRM

All six countries have adequate legal and institutional frameworks for DRM. They are depicted in Table 5.

Perceptions outlined in the latest Post-Disaster Needs Assessment (PDNA) documents for these countries indicated that institutional capacity for disaster risk management and emergency response coordination has scope for improvement.

Government Allocations for Disaster Risk Management Funds

Government institutions are traditionally dependant on allocations from the national budget.

Myanmar Law on Disaster Management specifies the establishment of a Natural Disaster Management Fund. In Nepal, the Prime Minister's Disaster Relief Fund has been established into which donors can deposit funds.[125] The Pakistan National Disaster Management Act mandates the establishment of the National Disaster Management Fund (NDMF), which operates as a government-owned non-bank financial intermediary with a corporate structure. An ADB loan fund has been provided by the government to the NDMF as a grant. The Philippine Disaster Risk Reduction and Management Act of 2010 (DRRMA) has taken an innovative approach to providing both disaster contingency funds and funds for disaster risk reduction (DRR). The National Disaster Risk Reduction and Management Council (NDRRMC) was mandated under the law to establish a National Disaster Risk Reduction and Management Fund (NDRRMF), also called the Calamity Fund,[126] where local authorities are mandated to allocate at least 5% of their revenues to Provincial and Local DRRM funds. The national fund is also allocated an annual

124 https://reliefweb.int/report/world/climate-change-vulnerability-index-2017

125 http://pmrelief.opmcm.gov.np/about.aspx

126 https://www.dbm.gov.ph/wp-content/uploads/NEP2018/NDRRMF.pdf

Table 5

Legal and Institutional Frameworks

Cambodia	
Legal enactment	Law on Disaster Management 2015
Apex Body	National Committee for Disaster Management (NCDM)
Nodal Point	
National Level	Five technical departments
Sub-national Level	Provincial Committees for Disaster Management (PCDM) Municipal Committees for Disaster Management (MCDN) District Committees for Disaster Management (DCDM) Commune Committee for Disaster Management (CCDM)
DRM Policy / Programs	Five-year National Strategy Development Plan (NSDP) Five-year Strategic National Action Plan for Disaster Risk Reduction (SNAP)
CC Policy / Programs	Strategic Program for Climate Resilience (SPCR)
Myanmar	
Legal enactment	Disaster Management Law 2013 Disaster Management Rule 2015
Apex Body	National Disaster Management Committee (NDMC) 2016 chaired by Union Minister of Home Affairs
Nodal Point	
National Level	Working Committees
Sub-national Level	Region or State Disaster Management Bodies
DRM Policy / Programs	Myanmar Action Plan on Disaster Risk Reduction (MAPDRR) 2017
CC Policy / Programs	Myanmar Climate Change Strategy and Action Plan (MCCSAP) 2017-2030
Nepal	
Legal enactment	Disaster Risk Reduction and Management Act, 2017
Apex Body	National DRM Council Chaired by Prime Minister
Nodal Point	Ministry of Home Affairs (MoHA)
National Level	National DRM Authority
Sub-national Level	Provincial DM Committee District DM Committee
DRM Policy / Programs	National Disaster Risk Reduction Policy Strategic Action Plan National Disaster Response Framework (NDRF) 2013
CC Policy / Programs	Climate Change Policy National Adaptation Program of Actions (NAPA) Local Adaptation Plan of Action (LAPA)
Pakistan	
Legal enactment	National Disaster Management Act 2010
Apex Body	National Disaster Management Commission (NDMC) Chaired by Prime Minister
Nodal Point	National Disaster Management Authority (NDMA)
National Level	
Sub-national Level	Provincial Disaster Management Authority (PDMA) FATA Disaster Management Authority (FDMA) GB Disaster Management Authority (GBDMA) for Gilgit-Baltistan State Disaster Management Authority (SDMA) for Azad Jammu and Kashmir District Disaster Management Authorities (DDMAs)
DRM Policy / Programs	National Disaster Response Plan (NDRP) 2010 National Disaster Management Plan (NDMP) 2012 National Disaster Risk Reduction Policy 2013 National Climate Change Policy 2012

The Philippines	
Legal enactment	Philippine Disaster Risk Reduction and Management (DRRM) Act 2010
Apex Body	National Disaster Risk Reduction and Management Council (NDRRMC)
Nodal Point	Office of the Civil Defense (OCD)
National Level	NDRRMC
Sub-national Level	Regional Disaster Risk Reduction Management Committees(DRRMCs) Provincial DRRMC City DRRMCs Municipal DRRMCs Barangay level BDRRMs
DRM Policy / Programs	Strategic National Action Plan for Disaster Risk Reduction 2009-19 (SNAP) National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028
CC Policy / Programs	The Law on Climate Change 2009
Sri Lanka	
Legal enactment	Sri Lanka Disaster Management Act No. 13 of 2005
Apex Body	National Council for Disaster Management (NCDM) Chaired by the President
Nodal Point	Ministry of Disaster Management
National Level	Disaster Management Center (DMC) 2005
Sub-national Level	District Disaster Management Coordinating Units (DDMCUs) under District Secretary
DRM Policy / Programs	National Policy for Disaster Risk Management Final draft of Sri Lanka Disaster Management Plan and The National Emergency Operations Plan (NEOP)
CC Policy / Programs	National Climate Change Policy National Climate Change Adaptation Strategy 2011-2016 National Adaptation Plan on Climate Change (NAP) Second National Communication (SNC)

budget under the national budget process and must allocate funds both for rapid response and DRR. In Sri Lanka, the disaster risk management allocation from the national budget was 0.07% of the GDP in 2016.

Donor Driven Disaster Risk Management Funds

On May 5, 2017, the Ministry of Economy and Finance in Cambodia, Ministry of Finance in Lao PDR, Ministry of Planning and Finance in Myanmar, and Ministry of Finance in Japan signed a Memorandum of Understanding (MoU) on the establishment of a country-led Regional Technical Working Group on Disaster Risk Finance and Insurance. The working group has developed the Southeast Asia Disaster Risk Insurance Facility (SEADRIF), a regional catastrophe risk pool to provide rapid response financing in the immediate aftermath of a disaster.[127]

In 2015, GlobalGiving established the Nepal Earthquake Relief and Recovery Fund.[128] The Center for Disaster Philanthropy (CDP) also established another Nepal Earthquake Recovery Fund[129] focused on the unique needs of child protection following disasters in a country where children were already extremely vulnerable.

Risk Transfer and Financial Tools

In Myanmar, after the impact of cyclone Nargis, financial tools to transfer and share risk were introduced by Myanmar Insurance under the

127 http://www.worldbank.org/en/events/2017/05/05/southeast-asian-countries-reach-milestone-agreement
128 https://www.globalgiving.org/projects/nepal-earthquake-relief-fund/
129 http://disasterphilanthropy.org/cdp-fund/cdp-nepal-earthquake-recovery-fund/

Ministry of Finance. However, they do not cover all types of disasters. Currently, seven insurance companies in the country contribute to sharing the risk by offering non-life insurance policies for fire incidents.

In Nepal, an agriculture and livestock insurance directive was issued in 2012 and a government subsidy of 50% has been provided on the premiums of crops and poultry insurance since mid-July 2013.

In Pakistan, the Insurance Ordinance in the year 2000 introduced an agriculture insurance scheme to cover the loss of or damage to agriculture-related property, including crops. The Kissan Package 2015, announced by the Prime Minister, bears PKR 2.5 billion premium on the agricultural insurance, which would benefit 0.7 million small farmers including livestock insurance for farmers having 10 animals or more. The Government of Pakistan, in collaboration with the World Bank (WB), has established a Development Policy Loan (DPL) as a contingent line of credit, with a Catastrophic Drawdown Option (CAT-DDO).[130] The government has to declare a state of disaster in order to activate the fund.

In Sri Lanka, the Agrarian Insurance Board formed by the Agricultural Insurance Law, No. 20 of 1973, introduced an insurance scheme for crops destroyed by disasters. After the enactment of the Agriculture and Agrarian Development Act, No. 20 of 1999, the Board expanded the insurance scheme for registered farmers affected by natural hazards.[131] Twenty crops are covered under the insurance scheme. The Board has proposed a weather-indexed system to cover losses to crops and livestock. Since 2010, it also provides insurance coverage based on the weather index for paddy and tea production. The SANASA Insurance Company Ltd., established under the regulation of Industry Act No.42 of 2000, offers life insurance coverage for selected hazards such as lightning, fire, floods, and snake bites. This insurance scheme was initially formed by community-level Funeral Aid Societies.[132] The Department of Fisheries provides two insurance schemes for fishermen registered with the Department. The first scheme provides life insurance coverage due to accidental death at sea, and the funds are released through the National Insurance Trust Fund. The second scheme, *Divi Sayura Deewara* Insurance is the Department's initiative with Ceylinco Insurance to provide the coverage for both natural and accidental deaths by collecting an annual premium from the registered fishermen. According to a 2012 cabinet paper, accidents due to cyclones were also included.[133]

In 2016, the National Insurance Trust Fund (NITF), under the Ministry of National Policies and Economic Affairs in collaboration with the Ministry of Finance, established an insurance policy to cover disasters caused by natural hazards in Sri Lanka, except for drought. This covers lives and properties, especially all households and small business establishments.[134] In addition to the NITF, the government has worked with the World Bank to establish a Development Policy Loan (DPL) as a contingent line of credit, with a Catastrophic Drawdown Option (CAT-DDO). The Cabinet of Ministers has approved the establishment of a DPL facility with CAT-DDO up to 102 million USD, effective from 2014.[135]

Baseline Assessment Study

This sample baseline study was carried out as the first step of program implementation to determine the current status of emergency preparedness in the selected countries. It will serve as a benchmark to inform decisions on the subsequent interventions to be carried out in each of the program countries. It will also be

130 https://tribune.com.pk/story/1128371/reform-push-world-bank-approves-1-02b-package-pakistan/
131 Agriculture Insurance Board http://aib.gov.lk/index.html
132 SANASA Insurance Company Ltd.http://www.sicl.lk/
133 Interview with Mr. Nihal Palitha, Director – Industries Division, Department of Fisheries
134 National Insurance Trust Fund http://www.nitf.lk/Home.html
135 Annual Report 2014 - Ministry of Disaster Management

Table 6

Composition of Country-specific Survey Samples

Category Sampled	Cambodia	Myanmar	Nepal	Pakistan	The Philippines	Sri Lanka
Government Organizations	38	63	29	54	64	57
Local NGOs + Red Cross	37	70	208	56	30	39
Private Sector Organizations	03	34	03	31	14	14
INGOs + UN agencies	20	22	09	13	1	09

useful to assess the impact of the interventions at the end of the program and is therefore inherent to the monitoring and evaluation mechanism. Baseline data will be used to define road maps towards strengthening emergency response capacities of local actors at the country level which will be aggregated at the regional level for the program.

Methodology of the Baseline Survey

Geographical areas in each country for the baseline survey were selected based on having high levels of disaster impact based on historical records. Government institutions, local NGOs, private sector organizations, the media and academia were respondents in this survey. Table 6 depicts the composition of the survey samples for different countries.

Myanmar (19), Nepal (03), Pakistan (09) and Sri Lanka (09) included academic institutions in the survey sample.

Methods and Instruments Used for Baseline Assessment Methodology

The methods used for the baseline assessment included a situational analysis based on a literature survey, structured questionnaire, focus group discussions (FGDs), and key informant interviews (KII). Instruments used to guide data collection were a generic questionnaire to ensure consistency and comparability of the findings. Where relevant, the questionnaire was translated to local languages. The questionnaire was distributed through the on-line Survey Monkey platform.[136] FDGs and KIIs were guided by FGD and KII guides.

Analysis

Most response options for the questionnaire were Likert-type responses for a group of categories ranging from least to most.[137] These provided ordinal data as ranked responses. Nonparametric procedures based on the rank and frequency of response for each rank were used as percentages to generate bar charts. According to the literature, the median is appropriate for analyzing such data.[138] Where the analysis required ascertaining whether responses were positive, neutral or negative, the median for the questions was taken to be rank 3. The total score for number of responses for ranks 1, 3 and 5 was calculated as (N_1 x 1 + N_3 x 3 + N_5 x 5) where N represented the number of responses for each rank. If the total score was above (N_3 x 3), it was considered to be a positive perception. A score of below (N_3 x 3) was taken as a negative perception while a score of exactly (N_3 x 3) was taken to be suggestive of a neutral perception.[139]

136 https://www.surveymonkey.com/
137 http://asq.org/quality-progress/2007/07/statistics/likert-scales-and-data-analyses.html
138 Jamieson S. Likert scales: how to (ab)use them. Med Educ. 2004;38(12):1217–1218
139 Kothari, C.R. (2004), Research Methodology-Methods and Techniques, New Age International (P) Ltd., Publishers, New Delhi

The questionnaire also contained "yes/no" questions and the frequencies of each response were tabulated and presented as percentages and visualized with supporting bar charts.

Perceptions collected in FGDs and KIIs were integrated into the synthesis report to reinforce and clarify the findings from the questionnaire survey with supporting details. Findings for each country were validated at a workshop of participating stakeholders.

Findings for Government Organizationsand LNGOs

Purpose of the organization

The purpose of the organization was assessed using the availability of a Vision and Mission statement for each organization. Table 7 provides responses from both government organizations and LNGO for the six countries.

One hundred percent of government organizations in Nepal, Pakistan, the Philippines, and Sri Lanka have vision/mission statements, while 90% of government organizations in Myanmar and 60% in Cambodia have vision/ mission statements. LNGO responses for availability of vision/mission statements in Nepal and Pakistan are 100%, while Sri Lanka and Cambodia show 97%, followed by Myanmar with 84%.

Institutional Capacity

Institutional capacity was assessed based on several criteria (represented by numbers) and sub-criteria (represented by bullet points) as follows:

1. Legal status and organizational structure

2. Administrative processes

- Manuals on administrative procedures
- Manuals on human resource management
- Recruitment policies
- Code of Conduct
- Work Place Harassment Policy
- Gender Sensitive Work Place Policy
- Adequacy of documented procedures
- Staff orientation in administrative procedures

Legal Status and Organizational Structure

Responses were sought based on the following criteria:

1. Registration with the national government

2. Geographical location(s) of emergency response activities for LNGOs

Table 7

Availability of Vision and Mission Statements

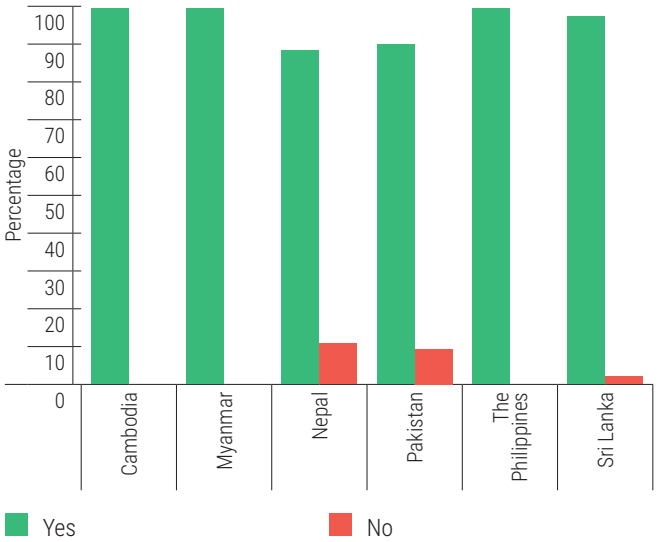
Criteria for response	Cambodia	Myanmar	Nepal	Pakistan	The Philippines	Sri Lanka
Vision/mission statement availability for government organizations	60%	90%	100%	100%	100%	100%
Vision/mission statement availability for LNGOs	97%	84%	100%	100%	80%	97%

Government Organizations

Government organizations in Cambodia are established under laws and regulations formulated by the Council for the Development of Cambodia (CDC) which guide organizational procedures. Therefore, they have standard organizational structures.

In Myanmar, the organizational structure of government organizations comes under the purview of the General Administration Department (GAD) and therefore organizational structures are regulated. In Nepal, government organizations have a stipulated organizational structure, regulated by an Act of Establishment. In Pakistan, government organizations are established through legislation or gazette notification based on cabinet approval pending parliamentary enactment. The organizational structure and cadre are a constituent part of these enactments. In the Philippines, government agencies follow the Civil Service Code and have stipulated organizational structures. In Sri Lanka, government organizations are established through legislation or gazette notification and have stipulated organizational structures.

Figure 6 Responses for Availability of Organizational Structure for LNGO



LNGOs

Responses obtained from LNGOs on availability of organizational structures are depicted in Figure 6.

Apart from Myanmar and the Philippines, and a small portion of the sample in Sri Lanka, all LNGOs expressed that they have an established organizational structure. LNGOs in Cambodia are required to register prior to the commencement of activities and are regulated by the Law on Associations and NGOs (LANGO, 2015). NGOs are registered through the Ministry of Interior (MOI).[140]

In Myanmar, there are two categories of NGOs that are registered with legal status:

- Local Myanmar non-profit civil organizations with only Myanmar citizens as members, which are termed local organizations. They are treated as local legal entities and must have at least five members when formed. Local organizations have the right to own immovable assets (i.e. land) and can also receive donations from foreign governments and other organizations.

- Organizations formulated in a foreign country with a mission to perform social activities in Myanmar must be registered as International Non-Governmental Organizations (INGOs). INGOs are treated as foreign entities and are registered in Myanmar. INGOs can include Myanmar citizens as members.

Additionally, an application for a Registration Certificate must be submitted to the Union Registration Committee in Naypyidaw that is chaired by the Minister of Home Affairs. The registration certificate is valid for five years. LNGOs include social components of religious organizations, and informal voluntary community-based associations working at the village level to perform social and religious functions, including health, education, and social

140 https://cambodianlaw.wordpress.com/2010/07/16/doing-good-by-doing-it-right-setting-up-an-ngo-in-cambodia/

services. There is no mandatory requirement for their registration. This explains the non-availability of organizational structure for a portion of the LNGOs sampled in Myanmar.

In Nepal, LNGOs are required to register prior to commencement of activities and are regulated by the Association Registration Act 1977 ("ARA") and the Social Welfare Act 1992. Registration of NGOs in Nepal is primarily handled by the District Administration Office. All LNGOs have established organizational structures.

In Pakistan, there are four main registration laws namely the Societies Registration Act of 1860, Trusts Act of 1882, Voluntary Social Welfare Agencies (Registration and Control) (VSWA) Ordinance of 1961, and the Companies Ordinance of 1984. All LNGOs are registered legal entities.

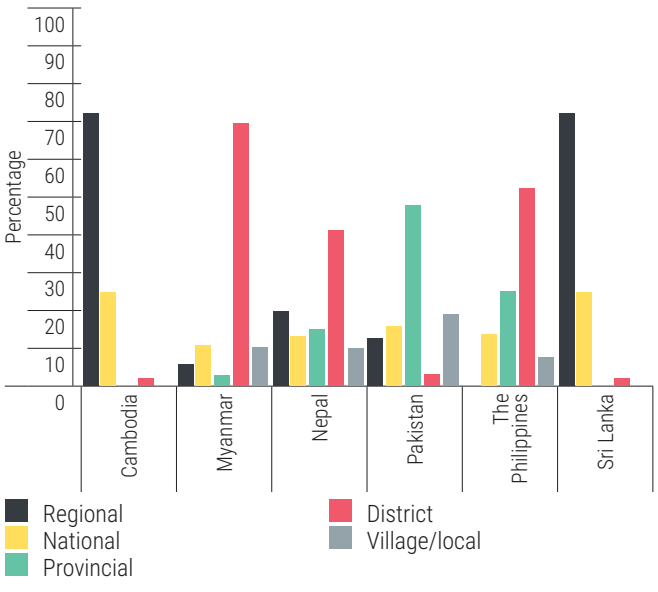
In the Philippines, of the 30 local humanitarian organizations surveyed, 24 are registered with the national government, 22 have accreditation, and 20 have articles of association. The rest are not formally sanctioned by local or national authorities.

In Sri Lanka, all LNGOs are required to register prior to commencement of activities and are regulated by a number of legal enactments. The Voluntary Social Service Organization Act No. 31 of 1980 (the "VSSO Act") requires all organizations that receive government grants or require visas for expatriate staff to register under this Act. Non-Profit Organizations (NPOs) may also register as limited liability companies under the Companies Act No. 17 of 1982, as Trusts under the Trust Ordinance No. 17 of 1917, as Charities under the Inland Revenue Act No. 38 of 2000, as Approved Charities under the Inland Revenue Act No. 4 of 1963 or the Inland Revenue Act No. 28 of 1979 or under the Mutual Provident Societies Act No. 55 of 1949. An NPO can also be formed by an Act of Parliament. The Voluntary Social Service Organizations (Registration and Supervision) (Amendment) Act, No. 8 of 1998, was an amendment to the VSSO Act. This amendment allows for an Interim Board of Management to be appointed to administer the affairs of an organization in cases of fraud or misappropriation.

In 1999, a Presidential Circular was issued, calling all NGOs to re-register with the National NGO Secretariat, asking them to declare their sources of funding, annual expenditure, and annual budgets. A pre-requisite for re-registration includes clearance from the Ministries in charge of the subjects of Defense, Foreign Affairs and Plan Implementation, as well as the relevant line Ministry. NGOs conducting activities in any District or at Divisional Secretariat levels also have to register with the applicable District or Divisional Secretary.

Operational areas of the sampled LNGOs are displayed in Figure 7 below.

Figure 7 Geographical Areas of LNGO Operation



The six countries differ in their demarcation of administrative boundaries and the use of terminology for the sub-national entities. Figure 7 depicts the responses obtained for regional, national, provincial, and district or village level as relevant to each country.

Administrative and Operational Procedures

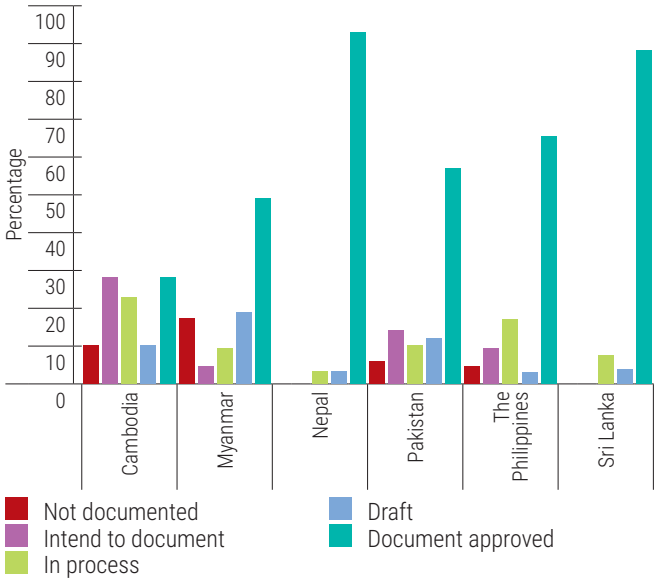
Availability of Documented Manuals on Administrative and Operational Procedures

Responses were sought on the current status of documentation of administrative procedures on a Likert-type scale with five-point response options (1- Not documented, 2- Intend to document, 3- In process, 4- Draft available, and 5- Document approved).

Government Organizations

Responses from government organizations on the documentation status of administrative procedures are provided in Figure 8.

Figure 8 Responses from Government Organizations on Status of Administrative Procedures

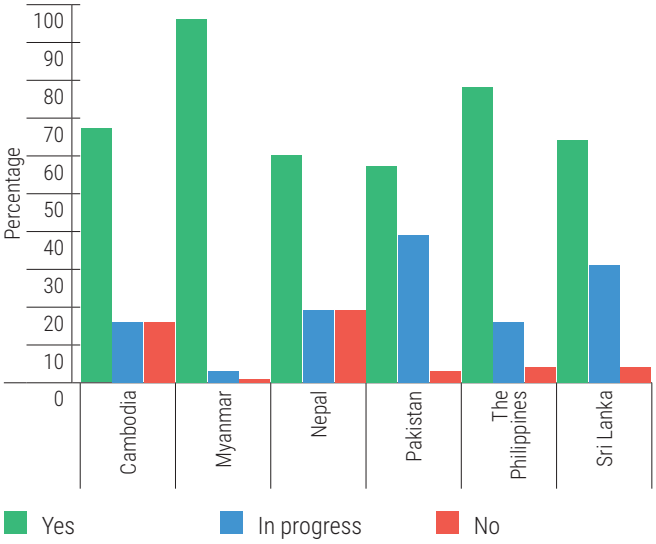


Responses for the availability of approved documents in Nepal exceed 90%. Sri Lanka is above 80%, followed by the Philippines at 60%, Pakistan at 50%, and Myanmar slightly below 50%. There is opportunity for improving administrative procedures for the latter two countries. Responses for Cambodia are lower and may be due to organizations relying on regulations formulated by the Council for Development for Cambodia (CDC), but requires further investigation.

LNGOs

Responses from LNGOs for required documentation on administrative and operational procedures were sought on a three-point scale (1- Yes, 2- In progress, and 3- No). Responses are displayed in Figure 9.

Figure 9 Responses from LNGOs Regarding Availability of Documentation on Administrative and Operational Procedures



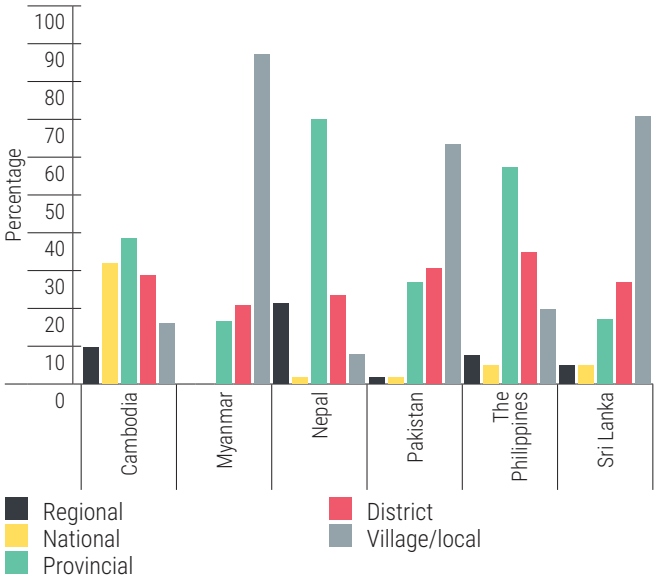
The number of responses for Nepal was highest exceeding 90%, followed by Pakistan nearing 80%. These are followed by Cambodia and Sri Lanka with more than 60%. Myanmar and the Philippines fall below 60%. The reason for this may be that a portion of the LNGOs in these two countries are not registered or accredited without the need for regularized procedure, as explained above.

Perception on Adequacy of Documented Procedures

Government Organizations

Perceptions on adequacy of the written policies with regards to the operational needs of the organization were sought using a Likert-type scale with five response options (1- Poor, 2- Below average, 3- Average, 4- Above average, and 5- High). Responses obtained from government organizations are depicted in Figure 10.

Figure 10 Government Organization Perceptions Regarding the Adequacy of Documented Procedures



Perception of adequacy is highest in Nepal ,followed by Sri Lanka and the Philippines. Although other countries show lower responses in the higher end of the scale, the overall perceptions found as a result of implementing the scale were positive. However, the responses for poor/below average point to a need to review existing documented administrative procedures for improved effectiveness.

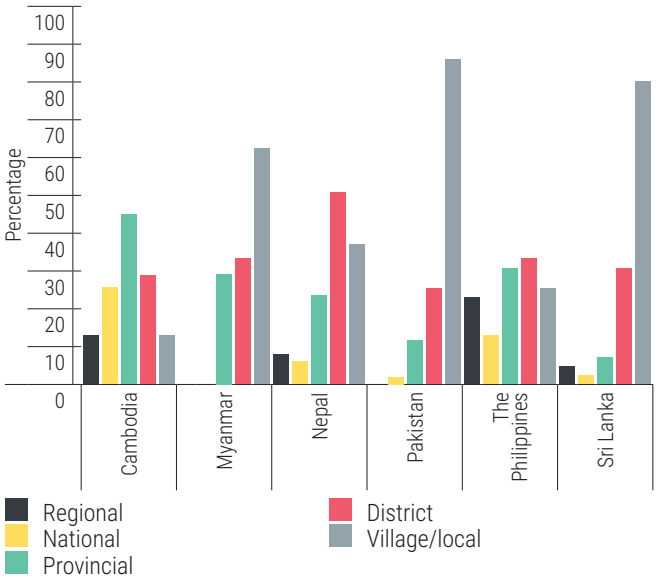
Responses for LNGO are not available.

Staff Orientation on Administrative and Operational Policies

Government Organizations

Perceptions regarding staff orientation on administrative and operational policies was sought using a Likert-type scale and five response options (1- None, 2- Being Planned, 3- Randomly, 4- Occasionally, and 5- Regularly). Responses obtained from government organizations are depicted in Figure 11.

Figure 11 Government Organization Responses Regarding Staff Orientation on Administrative and Operational Policies



Responses from Cambodia indicate a lack of staff orientation on administrative and operational policies in the government organizations. Other countries have positive perceptions regarding staff orientation on these areas. The Philippines, Sri Lanka, and Nepal show highest responses for regular staff orientation. However, this appears to be an area for improvement in the other three countries.

LNGOs

Responses from LNGOs on staff orientation were sought using a three-point scale (1- Yes, 2- Random, and 3- No). Responses are displayed in Figure 12.

The LNGO sector appears to provide a higher level of staff orientation on administrative and operational policies compared to their government counterparts. Responses from Nepal exceed 90%, followed closely by Cambodia at 90%. Sri Lanka shows 70% followed by Pakistan with over 60%, with Myanmar and the Philippines slightly over 50%.

Availability of Workplace Policy

Responses for availability of different categories of workplace policies are depicted in Table 8.

The symbol indicates responses ≥ 80%

Responses equal to or above 80% are considered high.

In Nepal, the government organizations canvassed in the survey were District Disaster Relief Committees (DDRCs). They do not have a human resource management policy or separate operational and administrative policies and procedures of their own as they are not autonomous entities. Nor do they have separate policies for selection, recruitment, or professional development. Since 1992, the Government of Nepal has enacted specific

Figure 12 LNGO Responses Regarding Staff Orientation on Administrative and Operational Policies

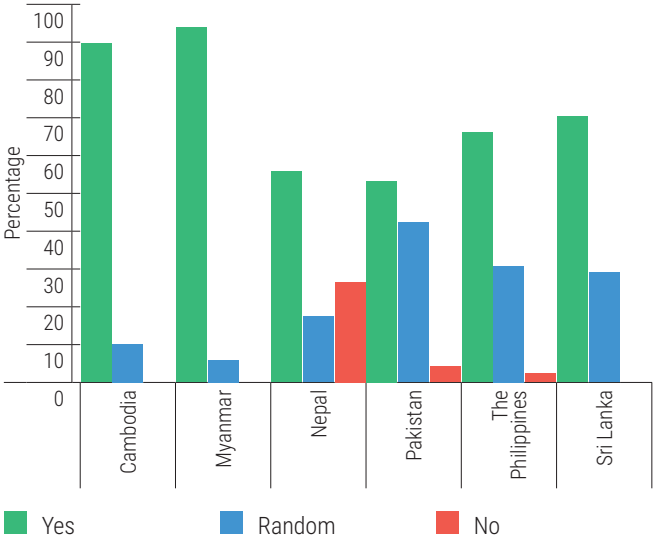


Table 8

Responses for Availability of Workplace Policies

Category of Workplace Policy	Cambodia		Myanmar		Nepal		Pakistan		The Philippines		Sri Lanka	
	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO
Code of Conduct	45%	✓ 90%	✓ 90%	40%		✓ 100%	70%	70%	✓ 80%	70%	✓ 100%	70%
Gender Sensitive Workplace Policy	40%	70%	10%	10%		✓ 87%	50%	40%	78%	40%	60%	60%
Workplace Harassment Policy	30%	✓ 90%	60%	20%		✓ 85%	60%	✓ 80%	60%	40%	60%	60%
Human Resources Policy	60%	70%	50%	60%		✓ 97%	65%	✓ 80%	✓ 80%	60%	✓ 90%	70%
Recruitment Policy	60%	60%	✓ 80%	30%		✓ 97%	80%	✓ 97%	✓ 80%	60%	✓ 95%	70%
Selection Policy	60%	60%	75%	30%		✓ 97%	80%	✓ 80%	✓ 80%	60%	✓ 95%	70%

✓ The symbol indicates responses ≥ 80%; Responses equal to or above 80% are considered high.

legislation addressing sexual harassment in the workplace, with the objective to protect the right of every individual to work in a safe environment. The Sexual Harassment at Workplace Prevention Act, 2015 with Labor Act, 1992 shapes provisions for Gender-Sensitive Workplace Policy in Nepal. Likely for this reason, the responses from LNGOs in Nepal reveal the highest availability of workplace policies.

Government responses from the Philippines and Sri Lanka show over 80% for Code of Conduct, and Pakistan, the Philippines, and Sri Lanka show high responses for availability of human resources policy, recruitment policy, and selection policy. Government responses for Pakistan show high values for the establishment of workplace harassment policies. The Government of Myanmar shows a high response for Code of Conduct and recruitment policies. Cambodia LNGOs show high responses for Code of Conduct and workplace harassment policies.

Staff Security

Risk Insurance

Government Organizations

Staff security was assessed to determine whether employees working in hazardous locations were covered by risk insurance. Responses are depicted in Figure 13.

Responses on the availability of risk insurance for staff working in hazardous locations was 100% for Nepal, followed by nearly 50% for Sri Lanka and 20% for Pakistan. There is no insurance coverage for government staff in Cambodia, Myanmar and the Philippines.

LNGOs

Responses for LNGOs are depicted in Figure 14.

Responses for availability of risk insurance for staff in the Nepal LNGO sector exceeded 70% and was above 60% in Cambodia. These were followed by the Philippines with 58%, Sri Lanka with 49%, and Pakistan with 25%. Myanmar insurance coverage was only 10%.

Besides Nepal, it is recommended that all study countries pay serious attention to providing risk insurance coverage for employees in both sectors.

Figure 13 Government Availability of Risk Insurance for Staff

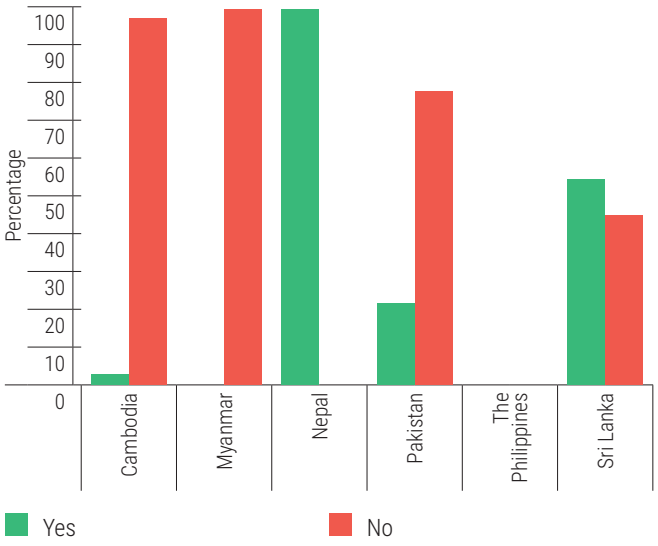
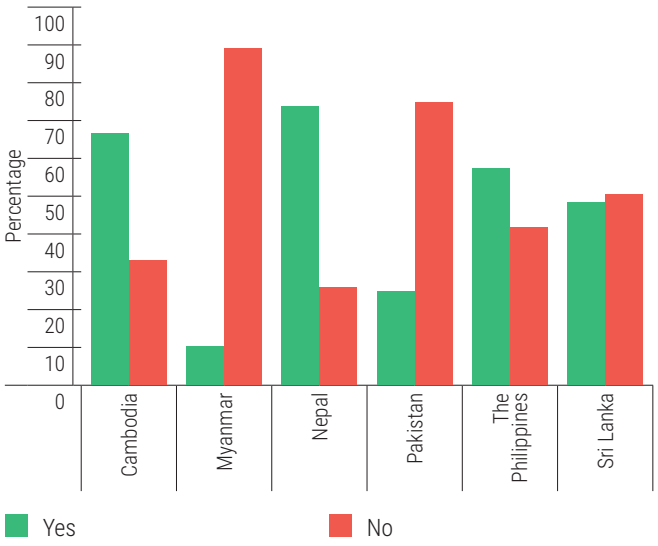


Figure 14 LNGO Availability of Risk Insurance for Staff



Financial Management

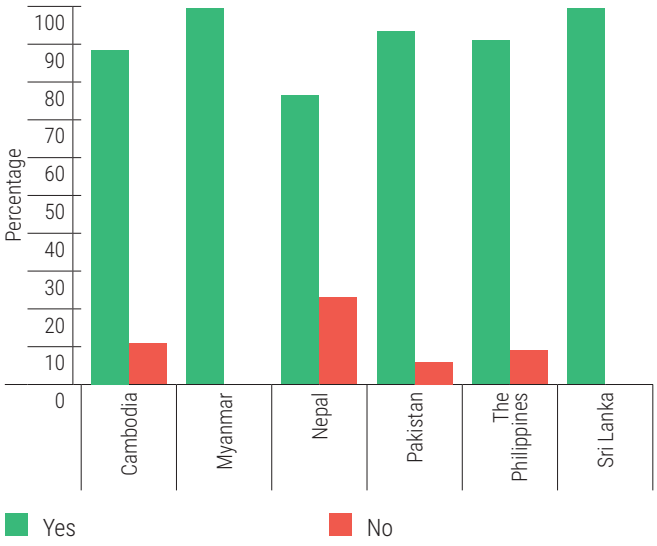
Responses were sought for the following:

- Availability of an established financial reporting system
- Completion of annual financial audits

Government Organizations

Responses for the availability of a financial reporting system is depicted in Figure 15.

Figure 15 Government Organization Availability of a Financial Reporting System



In Nepal and Sri Lanka, 100% of government organiations reported the availability of financial management and reporting. In Nepal, the government has standard financial regulations with which government organizations comply.[141] In Sri Lanka, financial reporting is mandatory for all government organizations, as they are required to apply financial regulations compiled by the Ministry Finance.[142] Auditing is subject to the Sri Lanka Accounting and Auditing Standards Act No. 15 of 1995 and the Auditory General is mandated to call for audits for government organizations.[143] The Philippines, Pakistan, and Cambodia follow with over 80% of government organizations having financial management systems in place. In the Philippines, appropriate financial reporting is a mandatory function in the Civil Service Code. The few responses for non-availability of financial reporting and auditing require verification. In Pakistan, government organizations are required to apply financial regulations compiled by the Ministry of Finance.[144] A low number of responses for lack of compliance needs to be verified. Accounting and Auditing Standards and the Auditor General of Pakistan is mandated to call for audits for government organizations.[145]

In Cambodia, government organizations are bound by regulations provided by the Council for the Development of Cambodia (CDC) to carry out financial reporting and auditing. Therefore, responses for proper financial management are high. The few responses on the lack of financial reporting and auditing requires further investigation.

In Myanmar, government organizations are bound to audit their financial management and its absence in some of the organizations sampled requires further investigation. Since 2011, financial management reforms have been on the rise in Myanmar.[146]

LNGOs

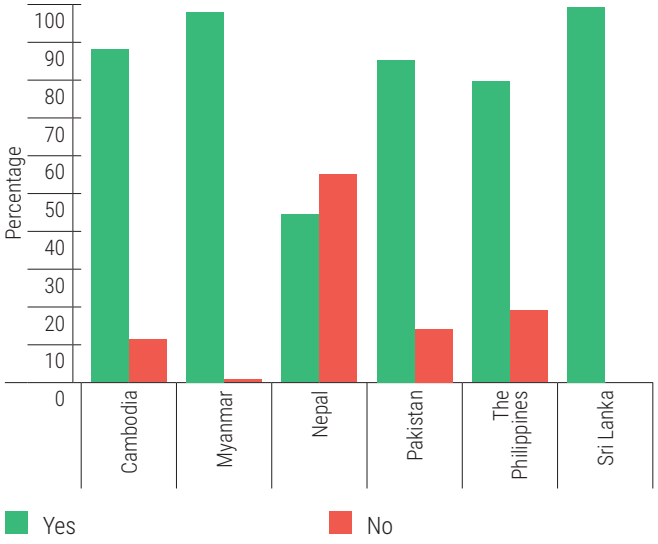
Responses obtained for the availability of a financial reporting system in the LNGO sector is depicted in Figure 16.

In Sri Lanka, 100% of LNGOs have a financial reporting system, followed by Nepal with slightly

141 See, for example, OAGN (2015) ***Financial Audit Manual***, Kathmandu: Office of the Auditor General Nepal (OAGN), OAGN (2006) ***Audit Guidelines for Administrative Expenditures***, Kathmandu: Office of the Auditor General Nepal (OAGN); OAGN (1996) ***Government Auditing Standards***, Kathmandu: Office of the Auditor General Nepal (OAGN).

142 https://www.govdoc.lk/financial-regulations-sri-lanka/
143 http://www.auditorgeneral.gov.lk/web/index.php/en/scope-of-
144 http://www.finance.gov.pk/
145 http://www.agp.gov.pk/index.php?page=about
146 http://isdp.eu/news/qa-towards-better-public-financial-management-myanmar-ei-phyo-maw/

Figure 16 Availability of a Financial Reporting System Among LNGOs



less than 100%. In Sri Lanka, Accounting and Auditing Standards Act No. 15 of 1995 is applicable to NGOs, and they are also accountable for financial management under the Statement of Recommended Practice for NPOs including Non-Governmental Organizations. In Nepal, national laws and their own statute guide the NGOs for financial management and book keeping.[147]

Responses for the availability of financial management system in the Philippines and Cambodia exceeded 80%. Pakistan was 80%, and responses for Myanmar were low at just above 40%.

Monitoring and Evaluation

M & E capacity was evaluated based on the following criteria:

- Availability of a written Monitoring, Evaluation, and Learning policy
- Availability of a communication strategy for dissemination of learnings

Figure 17 Government Organization Availability of Monitoring and Evaluation Policy

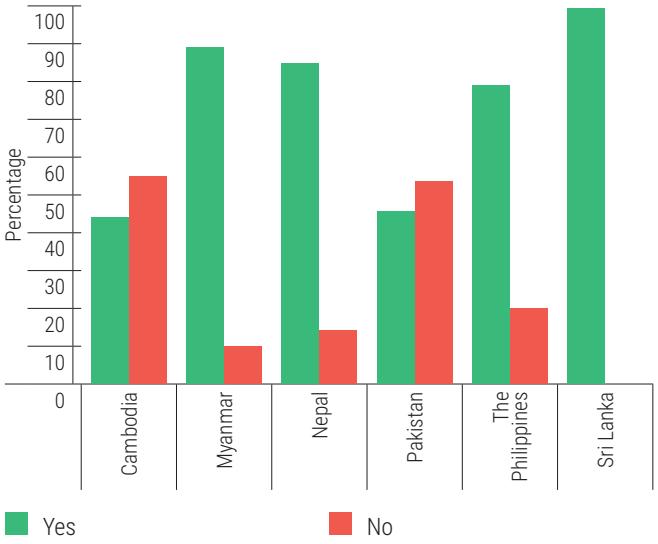
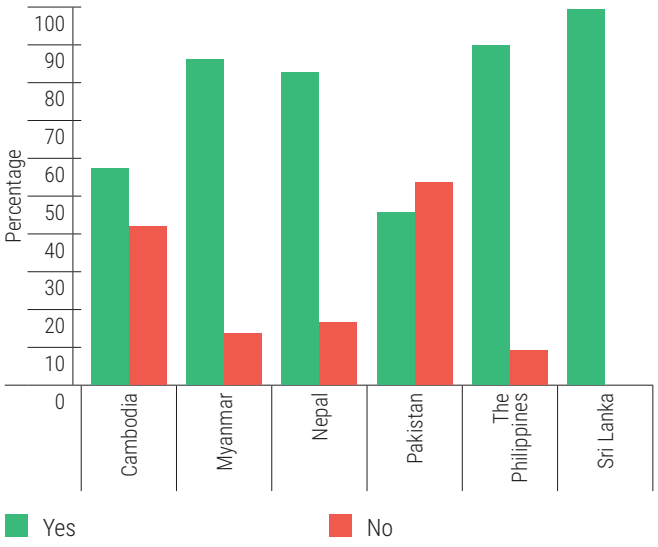


Figure 18 Government Organization Availability of a Communication Strategy for Dissemination of Learnings



147 Work Force Diversity and Internal Control System in NGOs Survey Report 2017

Government Organizations

Responses from government organizations for availability of written M & E Policy are depicted in Figure 17. Responses for availability of a communication strategy for dissemination of lessons learned are depicted in Figure 18.

In Sri Lanka, all organizations sampled responded that a written policy and a communication strategy for dissemination of lessons learned were available. In the Philippines, Nepal, and Myanmar respectively, the responses exceeded 80%. In Cambodia, responses for the availability of a communication strategy for dissemination of learnings was close to 60%, however, the availability of a written M & E policy was lower, at slightly above 40%. This may suggest that some organizations may have M & E procedures, even though the process is not documented.

In Pakistan, responses for availability of a written policy and communication strategy remain just above 40%. The results suggest that Cambodia and Pakistan require significant enhancement in these areas.

LNGOs

Responses from LNGOs regarding the availability of a written M & E Policy are depicted in Figure 19. Responses for availability of communication strategy for dissemination of lessons learned are depicted in Figure 20.In Sri Lanka, all of the LNGOs sampled responded that a written policy and a communication strategy for dissemination of lessons learned were available. LNGO responses for Nepal for exceed 80%. In Pakistan, responses for a written M & E policy reached 80%, however, availability of a communication strategy fell just below 60%. In the Philippines, responses for availability of a written M & E policy was just above 60%, but the availability of a communication strategy scored higher than 80%. In Cambodia the responses for a written M & E policy fell slightly below 60%, with the availability of a communication strategy reaching 60%. For Myanmar, values for availability of both the M & E policy and communication strategy remained low at 40%.

Figure 19 LNGO Availability of Monitoring and Evaluation Policy

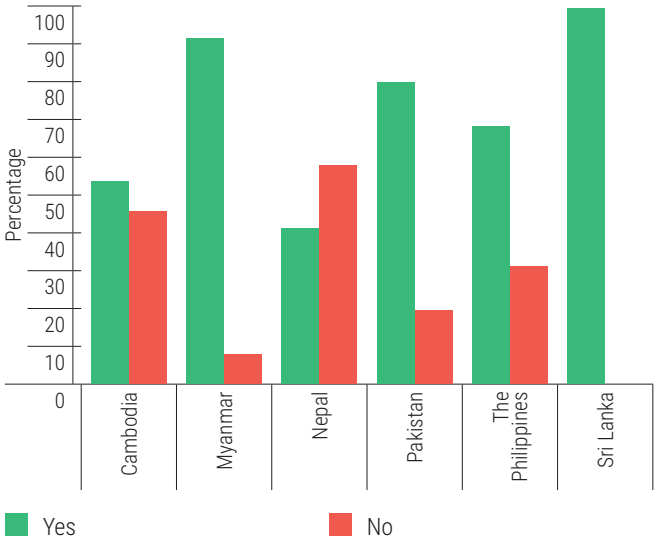
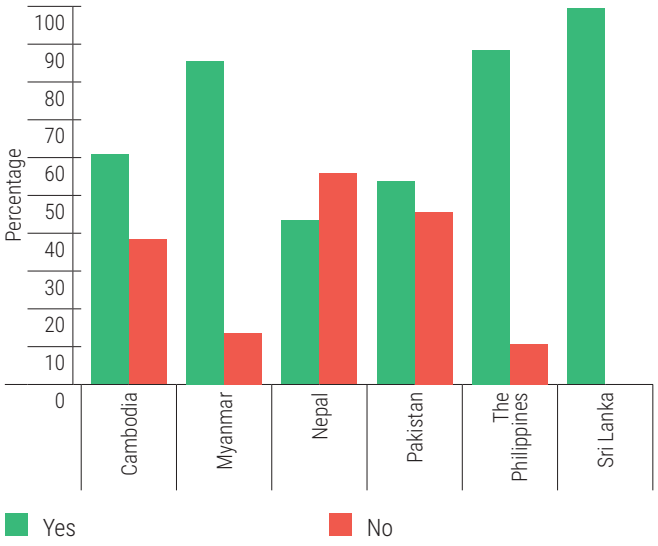


Figure 20 LNGO Availability of Communication Strategy for Dissemination of Learnings



Technical Capacity for Emergency Response

Organizational technical capacity for emergency response was assessed based on the following criteria, which also indicate organizational preparedness for emergency response.

1. Staff adequacy to perform emergency response
2. Availability of emergency response plan
3. Availability of Standard Operation Procedures (SOPs)
4. Conducting of simulation drills
5. Staff training for preparedness in emergency response

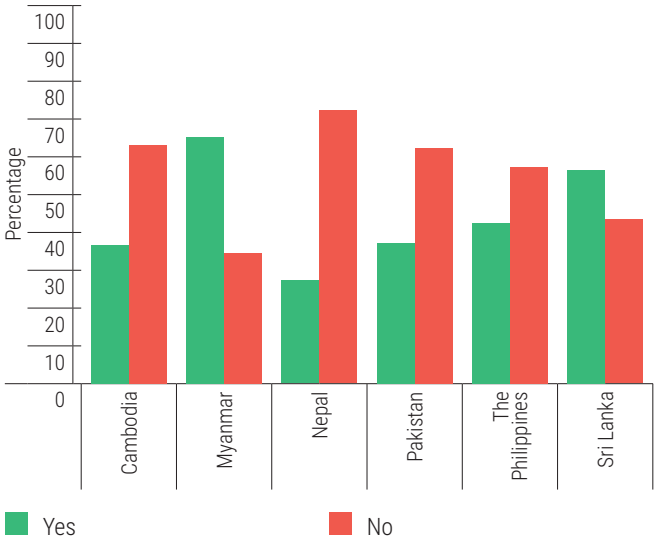
Staff Adequacy to Perform Emergency Response

Responses for staff adequacy to perform emergency response activities were sought as a yes/no response.

Government Organizations

Responses obtained for government organizations are depicted in Figure 21.

Figure 21 Responses from Government Organizations on Staff Adequacy



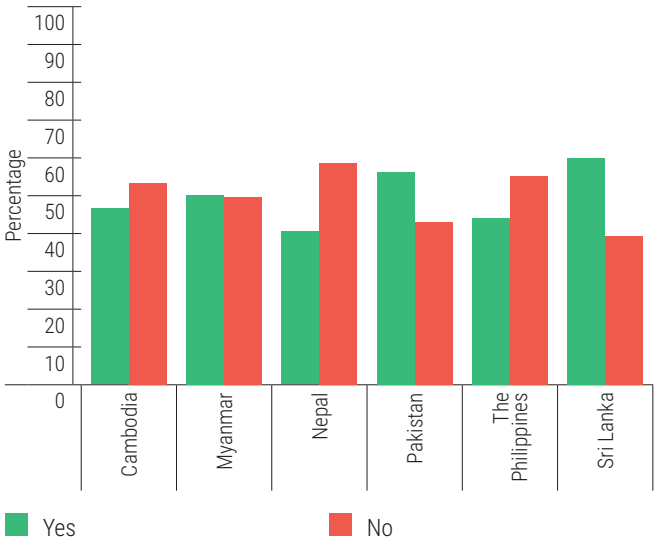
Nepal showed the highest responses (nearly about 65%) for adequacy of staff to perform emergency response activities, followed by Sri Lanka with about 55%. The Philippines followed with a little more than 40%. Pakistan and Cambodia follow respectively with below 40% responses. Myanmar responses are below 30%.

It appears that all countries could benefit from higher staff cadres. This is true especially for Myanmar, Pakistan, and Cambodia where there is an urgent need for recruitment of higher staff for emergency response.

LNGOs

Responses for the LNGO sector for staff adequacy for emergency response are depicted in Figure 22.

Figure 22 LNGO Responses on Staff Adequacy



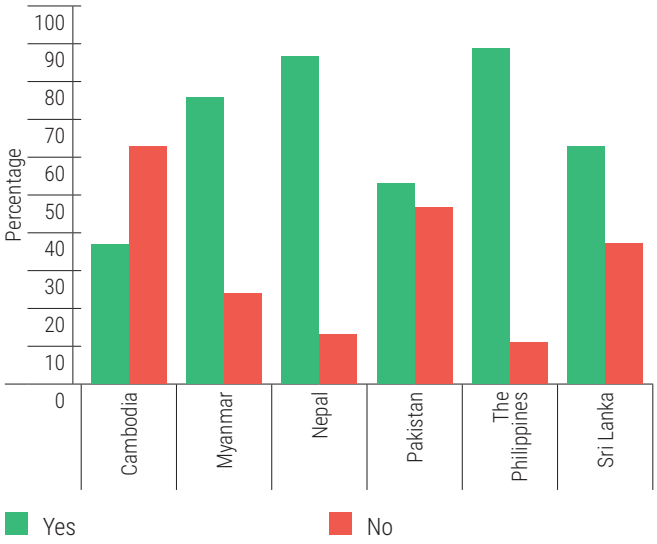
Responses are highest for Sri Lanka at 60%, followed by the Philippines at about 55%, and Nepal at 50%. Cambodia, Pakistan, and Myanmar responses are above 40%. All countries could benefit from a capacity building initiative for emergency response.

Availability of Emergency Response Plan

Government Organizations

Responses on availability of emergency response plans in the government organizations are depicted in Figure 23.

Figure 23 Availability of Emergency Response Plans in Government Organizations



Responses for availability of emergency response plans from Nepal, Myanmar, the Philippines, and Sri Lanka exceed 80%. Responses from Cambodia and Pakistan were over 70%. These figures include plans in the draft phase. Responses for emergency response plans was not available for the LNGO sector.

Availability of SOPs

Government Organizations

In Cambodia, over 70% of government organizations have SOPs approved or draft stage. In Myanmar, responses were near 80%. In Nepal, nearly all DDRCs have SOPs. In Pakistan, responses reached 70%. In the Philippines, the response was near 90%.

At a workshop for stakeholders in Sri Lanka conducted by the DMC to facilitate formulation of Institutional Emergency Response plans,[148] it became clear that only the Emergency Operation Centre (EOC) of the DMC, Atomic Energy Authority, Ceylon Electricity Board, and the Department of Health possess formulated SOPs. Other government organizations lack detailed SOPs for Emergency Management.

LNGOs

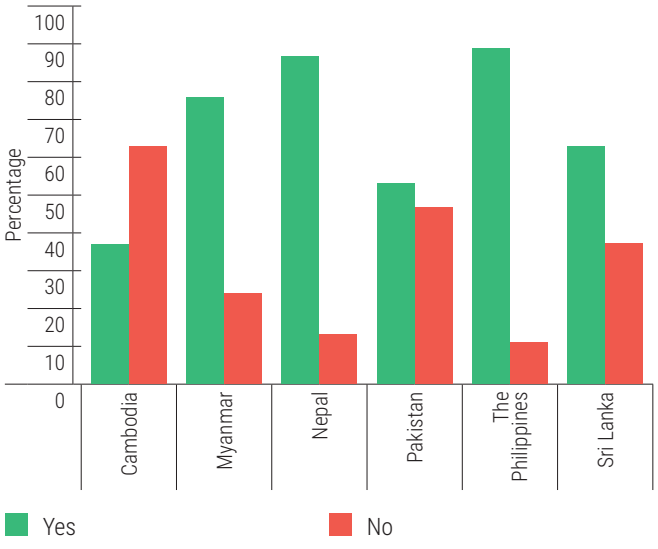
In Cambodia, LNGO responses for availability of SOPs for emergency response exceeded 80%. A majority of the LNGOs in the Philippines have formulated SOPs. The availability of SOPs in the LNGO sector in other countries is low and is an area that requires strengthening.

Conducting Simulation Drills

Government Organizations

Responses obtained from government organizations are depicted in Figure 24.

Figure 24 Responses for Conducting Simulation Drills



The highest responses for regular simulation drills came from the Philippines with nearly 90% of government organization conducting simulation drills. This was followed by Nepal

148 Personal communication with Chathura Liyanaarchchi. Asst. Director, Preparedness Planning Division, DMC

at slightly above 85%, Myanmar at about 75%, Sri Lanka just above 60%, and Pakistan just above 50%. In Cambodia, responses for annual simulation drills showed a value just below 40%. The results indicate that countries like Cambodia must focus on undertaking more simulation drills in order to enhance the emergency preparedness in the country.

Staff Training and Capacity Building for Preparedness in Emergency Response

Responses on capacity building carried out and perceived needs are presented in Table 9.

Table 10 reveals that the types of capacity building activities being carried out are limited, and the perceived needs for capacity building differ across the respective countries. For example, in Cambodia, many of the training courses have been standardized with the assistance of ADPC and Training-of-Trainers courses. Therefore, these courses are of consistent quality and include appropriate training activities. This level of standardization is necessary in other countries to ensure quality. Carrying out country-specific capacity building need surveys to fully comprehend desirable capacity building

Table 9

Government and LNGO Capacity Building Carried Out and Perception of Needs Achieved (✓) Needed (✓)

Desirable Capacities For Emergency Response	Capacity Building Undertaken					
	Cambodia	Myanmar	Nepal	Pakistan	The Philippines	Sri Lanka
Pre-Disaster Capacity Needs						
Contingency Planning	✓		✓	✓ ✓	✓ ✓	✓
Response Planning						✓
Business Continuity Planning						
SOP formulation						✓
CBDRM	✓		✓	✓ ✓		✓
Disaster Preparedness		✓	✓			✓
Risk Communication	✓	✓ ✓	✓	✓ ✓	✓ ✓	✓ ✓
Database Management	✓				✓	
Early Warning Dissemination	✓ ✓	✓	✓	✓ ✓	✓	✓
Warehouse Management		✓ ✓		✓ ✓	✓ ✓	
Evacuation Drills	✓				✓	✓ ✓
Humanitarian Coordination	✓					
Other						
During Disaster Capacity Needs						
ER Management	✓ ✓	✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
Incident Command System			✓	✓ ✓	✓ ✓	✓
Evacuation Assistance	✓		✓	✓ ✓	✓	✓
Camp Management	✓			✓	✓	✓
Sphere Standards	✓ ✓		✓	✓ ✓		
Search and Rescue	✓	✓ ✓	✓	✓ ✓	✓ ✓	✓ ✓
Relief Material Distribution		✓		✓	✓	✓
Provision of NFRIs						
First Aid	✓ ✓	✓ ✓	✓	✓ ✓	✓ ✓	✓ ✓
Psycho-social Counseling			✓	✓	✓ ✓	

Coordination	✓		✓✓	✓✓		✓
Mass Casualty Management	✓		✓	✓✓	✓✓	
Hospital Preparedness	✓	✓	✓	✓✓		
Fire Fighting		✓			✓	
Other						
Post-Disaster Capacity Needs						
Rapid Needs Assessment	✓✓		✓	✓✓	✓	
Clearing Debris						
Dead Body Management		✓			✓	
Disaster Victim Identification						
Educational Continuity			✓	✓	✓	
Livelihood Recovery						

interventions for preparedness for emergency response in the six program countries is recommended.

Table 10 depicts training received by male and female staff in the six countries.

In Cambodia and Sri Lanka, female staff have had more opportunities for capacity building in both government and LNGO sectors. In Myanmar, males and females have had even opportunities in both these sectors. In Nepal and the Philippines, male and female staff from the LNGO sector have had approximately even opportunities. In Pakistan, female staff in the LNGO sector have had slightly more opportunities than their male counterparts. Government sector male staff in Nepal, Pakistan, and the Philippines have had more opportunities for capacity building.

Figure 25 depicts providers of capacity building.

The X axis labeling for UNGO should be UNO. Use only government instead of National Government. This Chart would be with Lovel from the original Synthesis Report

Figure 25 Providers of Capacity Building

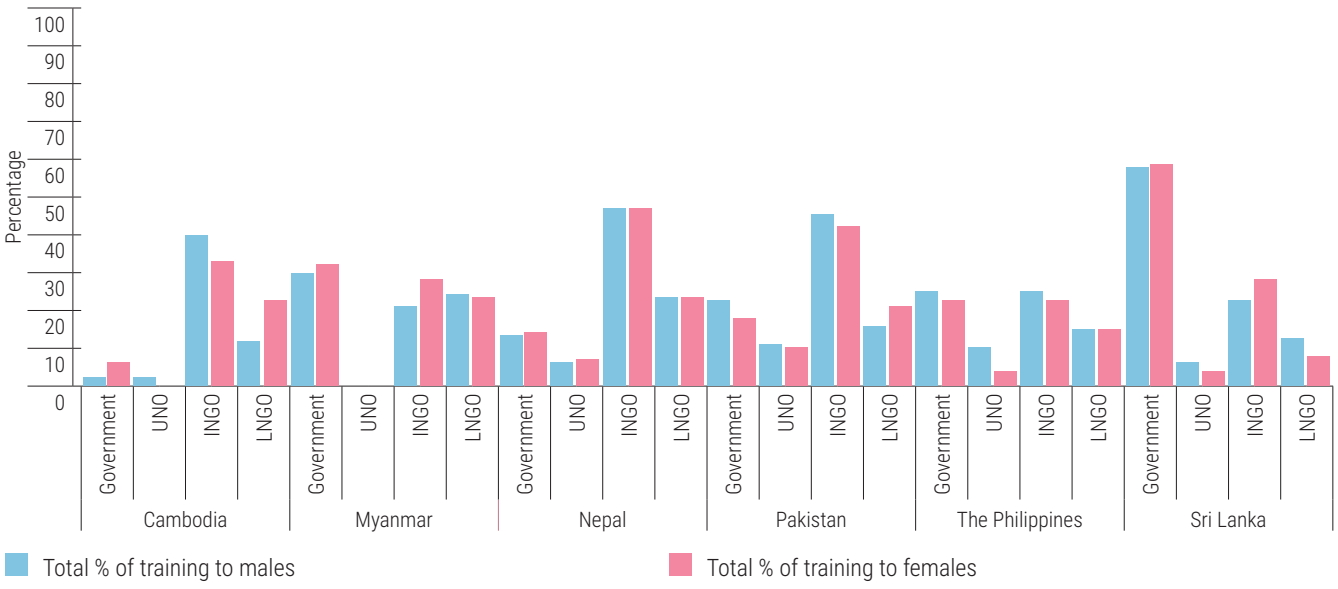
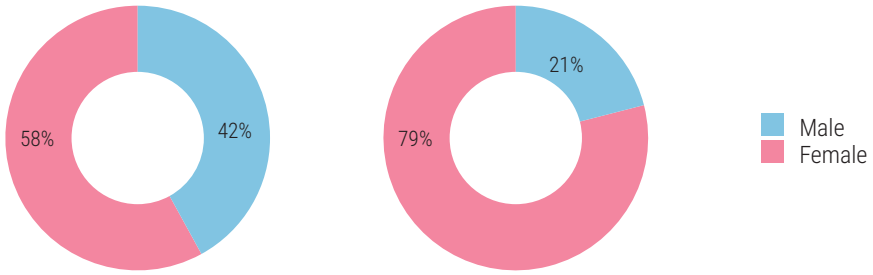


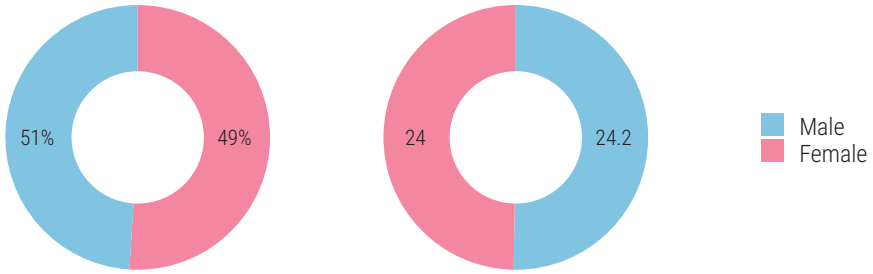
Table 10

Gender Disaggregated Data for Staff Capacity Building

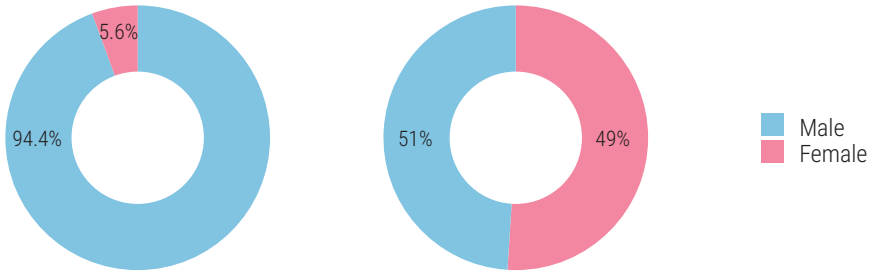
Cambodia



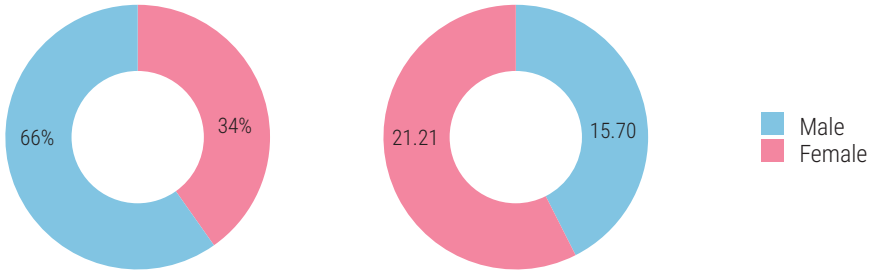
Myanmar



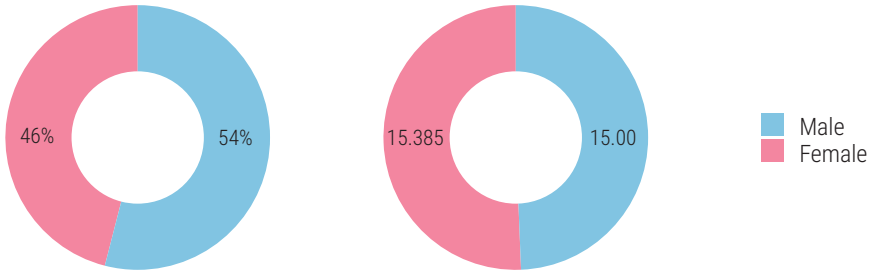
Nepal



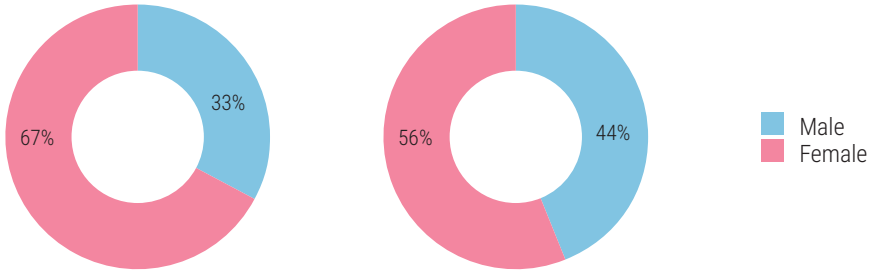
Pakistan



The Philippines



Sri Lanka



In Sri Lanka and Myanmar, the highest contribution to capacity building is from the national government. In the Philippines, both government contributions and INGO initiatives have led the capacity building efforts. Government contributions for capacity building in Cambodia have been relatively low. INGO contributions for capacity building was found to be highest in Nepal, followed by Pakistan and Cambodia. LNGO contributions have remained at a relatively comparable level in all countries, but lower than government and INGO contributions. Contributions from UN organizations have been low across all countries.

Coordination between Stakeholders

The level of coordination between stakeholder organizations during emergency management was assessed based on the following two criteria:

- Inclusion in a disaster management coordination network
- Perception of the adequacy of its functional effectiveness

Inclusion was measured based on the responses to a yes/no survey question. Perception of effectiveness of coordination was measured through a Likert-type scale with a five-point response (1- Poor, 2- Below Average, 3- Average, 4- Above Average, and 5- High).

In Cambodia, all government organizations and LNGOs responded that they were part of an emergency response network. Responses on a Likert-type scale found that perception of effectiveness of coordination was positive. The LNGO database in Cambodia provides a practical tool to promote and monitor the alignment of LNGO with the priorities of the National Strategic Development Plan (NSDP) and the aid management principles included in the RGC Action Plan on Harmonization, Alignment and Results (H-A-R Action Plan).

Nearly 126 Cambodian LNGOs are members of the Cambodian Humanitarian Forum (CHF).

Cambodia established the Humanitarian Response Forum (HRF) in 2011, responding to the demand for increased coordination between development partners to prepare for and respond to humanitarian disasters, primarily floods and droughts. The objective of the HRF is to support strengthening coordination and communication on emergency preparedness and response in Cambodia between the UN, INGOs, international organizations (IOs), and LNGOs through the CHF.[149]

In Myanmar, nearly all organizations responded that they were affiliated with a disaster response network. Responses on a Likert-type scale found that perception of effectiveness of coordination was positive. In terms of the present UN Humanitarian architecture, the OCHA Myanmar Country Office was established in May 2008 in response to Cyclone Nargis. OCHA maintained its presence in the country after the end of Cyclone Nargis to focus on issues related to its core mandate, such as providing support to humanitarian coordination at central and local levels, advocacy, humanitarian access, and principled humanitarian action. OCHA works closely with the Ministry of Social Welfare, Relief and Resettlement on disaster preparedness and response, and actively supports government efforts aimed at ensuring a more systematic, inclusive, and coordinated approach to humanitarian challenges in Myanmar. OCHA provides coordination and support to the humanitarian community as secretariat to the Humanitarian Country Team (HCT), which was established in 2010 and has helped improve joint and coordinated planning among UN agencies, the Red Cross movement, and international and national NGOs involved in humanitarian response. The Myanmar HCT is convened under the leadership of the Humanitarian Coordinator (RC/HC).

149 https://reliefweb.int/report/cambodia/humanitarian-response-forum-hrf-contingency-plan-cambodia

The Myanmar NGO Network (MNN) operates to increase coordination and cooperation among NGOs, including an increased exchange of information, experiences, and ideas, and to effectively communicate with UN agencies, international organizations, and the Government of Myanmar. The MNN provides local NGOs with information, technology, and assistance for capacity development.

The Women's Organizations Network (WON) Myanmar is a network of 27 women's community-based organizations. It is the first women's organization network in the country, formed in the aftermath of the Cyclone Nargis disaster in 2008 to facilitate the exchange of information and experiences, and to promote mutual learning and cooperation among women-led groups. WON is striving to improve socioeconomic conditions and empower and to promote the role of women in society.

The Local Resource Center (LRC) was formed in 2008 by local and international NGOs to support the increased coordination of their emergency relief and humanitarian assistance after Cyclone Nargis struck the southern part of the country. The LRC, with a head office in Yangon and regional coordination offices in Lashio, Mandalay, and Mawlamyine, is now the coordinating body for more than 600 civil society organizations, and has links to over 30 civil society networks. The LRC focuses on the development of indigenous organizations by promoting institutional development through capacity building and information sharing. The LRC creates opportunities for civil society organizations to engage and collaborate with other public and private stakeholders. Through broad-based dialogue and research-based advocacy, the LRC works toward establishing a more enabling policy environment for civil society engagement and a vibrant collective culture among organizations in Myanmar.

The Myanmar Humanitarian Response Plan 2017 includes a commitment from the Humanitarian Country Team to work more closely with the government to build national capacity, particularly in disaster preparedness and response. It also includes strong support for localization efforts with a focus on the role of national and local civil society in humanitarian work. Emphasis is placed on the need to listen and respond to the needs of affected communities, bridge humanitarian and development work, and maintaining full respect for humanitarian principles.[150]

In Nepal, a total of 96% of the DDRCs responded that they were part of a coordinating network. A total of 83.5% of the LNGOs belonged to a coordination network at the national or local level. Responses on a Likert-type scale found that perception of effectiveness of coordination was positive for both the government and LNGO sectors. At the national level in Nepal, there are two coordination mechanisms in place. The Cluster System and the Humanitarian Country Team (HCT). The Cluster System was instituted during the 2008 Koshi floods. Each cluster is led by respective line ministries and co-led by relevant development partner(s). Clusters are mobilized in disaster preparedness and also activated during response and recovery phases. The following clusters are currently working in Nepal: Camp Coordination and Management, Emergency Communication, Logistics, Early Recovery, Food Security, Nutrition, Health, Education, Protection, and Shelter.

The Humanitarian Country Team (HCT), along with the Executive Committee on Humanitarian Affairs, assists the UN Emergency Relief Coordinator with strategic coordination and consultation among key humanitarian actors. Members of the HCT are selected UN agencies and INGOs, and the Nepal Red Cross Society (NRCS). The Nepal HCT meets on a monthly basis or as required.[151] The Nepal Inter Agency Standing Committee (IASC) was established in April 2006. It is a unique inter-agency forum for coordination, policy development, and

150 http://mm.one.un.org/content/unct/myanmar/en/home/news/2017-myanmar-humanitarian-response-plan--january---december-2017.html

151 http://www.ifrc.org/docs/IDRL/2011%20National%20Disaster%20Response%20Framework%20(unofficial%20translation%20).pdf

decision-making involving key UN and non-UN humanitarian partners.

In addition, at the district level, the practice of establishing District Lead Support Agencies (DLSA) has been initiated. For effective coordination with humanitarian partners at the district level, a DLSA has been instituted in some districts. Generally, the DLSA is an INGO working in the district and links the DDRC with other humanitarian partners. Nepal is also a member of the Regional Consultative Group on Humanitarian Civil-Military Coordination for Asia and the Pacific and is engaged in the coordination of operational planning between civilian and military actors that may provide support using foreign military assets in the event of a large-scale natural disaster.[152]

In Pakistan, a total of 85% of government respondents and 77% of LNGO respondents expressed that they are included in a disaster management coordination network. Responses on a Likert-type scale found that perception of effectiveness of coordination was positive for both the government sector and LNGOs.

The coordination structure in Pakistan consists of the Humanitarian Coordinator (HC), the Humanitarian Country Team (HCT), and the Inter-Cluster Coordination Mechanism at the national level, and where relevant, also includes provincial levels, district coordination cells, the Cluster System, and UN OCHA.[153]

The HC chairs the Humanitarian Country Team meetings with OCHA acting as the Secretariat. OCHA contributes to operational coordination, humanitarian financing, advocacy, and information management. The clusters adopt a sectoral approach with Oxfam and World Vision leading water, sanitation and hygiene (WASH), Plan and Save the Children leading Education, UNICEF leading nutrition and child protection, UNFPA leading women's protection, WFP leading food security, FAO leading agriculture, WHO leading health, and IOM, IFRC and UN-Habitat leading shelter. Through knowledge sharing and training, OCHA also seeks to strengthen the capacity of stakeholders to respond to emergencies. However, during the 2010 floods response, due to the severity and magnitude of the disaster, a separate senior humanitarian advisor was appointed, and this was generally viewed as a positive and flexible approach to leadership during the emergency.

Focus Group Discussions (FGDs) revealed that LNGOs do not have dedicated focal persons to attend coordination meetings. The participants expressed a need for authorizing representation at coordination meetings of selected LNGOs using a transparent selection process and ensuring the selection of a diverse range of national and local NGOs. There is also a need to determine criteria for participation in clusters.

In the Philippines, 97% of government respondents stated that they are included in a disaster management coordination network. The majority of surveyed local humanitarian organizations are part of a network of local, national, and/or international humanitarian organizations. Responses on a Likert-type scale found that perception of effectiveness of coordination was positive for both the government and LNGO sectors. .

The Government of the Philippines institutionalized the cluster coordination architecture in 2007. In October 2014, the government released the National Disaster Response Plan (NDRP) for Hydro-Meteorological Hazards. OCHA supports the Department of Social Welfare and Development and the Office of Civil Defense with inter-cluster coordination, while the HCT members act as co-lead agencies for respective government response clusters. It is also a member of the Regional Consultative Group (RCG) on Humanitarian Civil-Military Coordination.[154]

152 https://www.unocha.org/asia-and-pacific-roap/nepal
153 http://pakhumanitarianforum.org/ocha-and-cluster-system/
154 https://reliefweb.int/sites/reliefweb.int/files/resources/OCHAPhilippines%20Humanitarian%20Bulletin%20No6%20%28June%202016%29%20FINAL.pdf

Table 11

Availability of Databases and Knowledge Material Production

Key for Table

0 – 30%	Very Low		60-80%	High	
30 – 50%	Low		80 -100%	Very High	
50 - 60%	Moderate		No response available		

Stakeholder Category	Cambodia		Myanmar		Nepal		Pakistan		The Philippines		Sri Lanka	
	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO
Availability of database												
Production of knowledge material												

In Sri Lanka, 100% of the government organizations and 67% LNGO respondents stated that they are part of an emergency response network. Responses on a Likert-type scale found that perception of effectiveness of coordination was positive for the government sector, but negative for the LNGO sector.

In early 2005, the Office for the Coordination of Humanitarian Affairs (UNOCHA) established a Sri Lanka Country Office to provide support to the government in emergency response and preparedness.[155] The cluster approach was functioning throughout the civil strife that prevailed over three decades. The conflict lead to a serious issue of Internally Displaced Persons (IDPs). However, after the end of the war in 2009, with the improvement of the humanitarian situation, UNOCHA phased-out its operations between 2011 and 2014. The cluster approach specifically was phased out by 2013.

In the aftermath of the 2016 floods, which drew much criticism due to the way in which response and relief efforts were handled by the government, a voluntary emergency response plan was put into operation convened by the UN Resident Coordinator's Office and Chair of the Humanitarian Country Team (HCT) to complement the government-led response in Sri Lanka. The emergency response plan outlined the support from UN agencies and local and international NGOs during emergencies.[156] It included a sectoral approach, with Oxfam and World Vision leading water, sanitation and hygiene (WASH), Plan International and Save the Children leading education, UNICEF leading nutrition and child protection, UNFPA leading women' protection, WFP leading food security, FAO leading agriculture, WHO leading health, IOM, IFRC, and UN Habitat leading shelter.[157]

Knowledge Management

The level of knowledge management for emergency response was assessed using the following criteria:

- Availability of institutional database for emergency response
- Production of knowledge material
- Sharing of the produced knowledge material

Availability of institutional databases and production of knowledge material are depicted in Table 11.

155 http://lk.one.un.org/7060/en/office-for-the-coordination-of-humanitarian-affairs-in-sri-lanka

156 http://www.colombopage.com/archive_17A/Jun02_1496422485CH.php

157 Communication with Watsala Jayamanna, UNICEF

Table 12

Responses on Status of Knowledge Sharing

Key for Table

0 – 30%	Very Low	60-80%	High
30 – 50%	Low	80 -100%	Very High
50 - 60%	Moderate	No response available	

Stakeholder Category	Cambodia		Myanmar		Nepal		Pakistan		The Philippines		Sri Lanka	
	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO
Government Organizations												
LNGOs												
INGOs												
Donors												
Bilateral Organizations												
Private Sector												
Academia												
Media												

In Cambodia, nearly 70% of the surveyed government organizations and LNGOs responded that they have an institutional database. Responses revealed that only a few government organizations and about 50% of LNGOs produced knowledge products. Status of sharing knowledge products is depicted in Table 12.

In Myanmar, 95% of the government organizations and 63% of LNGO respondents expressed that they have an institutional database for emergency response. 71% of the government organizations and 63% of LNGOs responded that they produce knowledge material. The Myanmar Information Management Unit provides information management services to strengthen analysis and decision making within the humanitarian and development community. It maintains civil society databases by sector and based on nationwide, regional, township, village tract, and village location and provides information on which group is doing what kind of activities in which locations.

In Nepal, all DDRCs responded that they maintain databases. Disaster data are officially collected, compiled, and maintained by the MoHA, and displayed online in a portal called “Nepal DRR Portal.” 94.8% of LNGOs acknowledged the availability of institutional databases. Production of knowledge material by LNGOs in the country is high.

In Pakistan, 55% of government organizations responded that an emergency response database is maintained and shared. Production of knowledge material and their sharing is moderate.

In the Philippines, 75% of the government organizations and majority of LNGOs responded that they have an emergency response database. Production of knowledge material is high.

In Sri Lanka, government responses exceeded 90% for the availability of an institutional database. This value is contradictory the observations of the Flood PDNA 2017. It is likely,

Table 13

Humanitarian Accountability and Standards

Key for Table

0 – 30%	Very Low		60-80%	High	
30 – 50%	Low		80 -100%	Very High	
50 - 60%	Moderate		No response available		

Humanitarian Accountability & Standards		Cambodia		Myanmar		Nepal		Pakistan		The Philippines		Sri Lanka	
		Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO	Gov.	LNGO
HAP	Certified												
	Acknowledge												
SPHERE STANDARDS	Acknowledge												
CHS	Certified												
	Acknowledge												

though it requires further investigation, that the responses in the survey may be referring to the presence of an institutional database, and not one dedicated to emergency response.

A total of 73% of LNGOs in Sri Lanka have institutional databases. However, the responses do not reveal whether these constitute emergency response information. Production of knowledge products is moderate.

Overall, capacity building for production of knowledge material appears to be a need across countries, especially if south-south knowledge transfer is desired.

The status of knowledge sharing by government organizations and LNGOs with relevant stakeholders is presented in Table 13.

In Cambodia, responses for sharing available knowledge products by government organizations with other government entities and LNGOs is very high. Sharing with INGOs is high, while the level is moderate for donors and bilateral agencies. The level of sharing with academia is low, and it is very low with the private sector and media. Knowledge sharing by LNGOs with all stakeholders is very low.

In Myanmar, responses for sharing knowledge products by government organizations is very high with media, but very low with all other stakeholders. No responses were available for LNGOs. This status may be due to the role of the Myanmar Information Management Unit in providing information management services to strengthen analysis and decision making within the humanitarian and development community.

In Nepal, responses for sharing knowledge products by government organizations is very high with donors and bilateral agencies. It is high with other government entities, LNGOs, and INGOs. Sharing is moderate with the private sector, low with academia, and very low with the media. Sharing by LNGOs is high with government entities, and moderate with other LNGOs, INGOs, donors, and bilateral agencies. Sharing with the private sector, academia, and the media is very low.

In Pakistan, responses for sharing knowledge products by government organizations is low with other government entities. Sharing with all other stakeholders is very low at less than 30%. Responses for sharing of knowledge products by LNGOs with stakeholders is also very low.

In the Philippines, responses indicate that sharing of knowledge products by government organizations and LNGOs are very high with each other. Sharing by both government organizations and LNGOs is high with INGOs and bilateral organizations. Sharing by government organizations is high with media and moderate with academia. Sharing with donors by both sectors is very low. LNGOs sharing with media is also very low.

In Sri Lanka, both government organizations and LNGO responses indicate a high level of sharing with each other, INGOs, and donors. Responses for sharing with bilateral organizations is high in the government sector, and moderate by LNGOs. Sharing with the private sector is low by government organizations and high by LNGOs. Sharing with academia is moderate by government organizations and low by LNGOs. Sharing with the media is moderate in the government sector, but very low among LNGOs.

Humanitarian Standards

Affiliation with humanitarian standards was assessed based on the following three criteria:

- Member of the Humanitarian Accountability Partnership (HAP)
- Acknowledgement of Sphere Standards
- Acknowledgement of Core Humanitarian Standards (CHS)

HAP is a multi-agency initiative working to improve the accountability of humanitarian action to people affected by disasters and other crises. HAP members range from organizations with a mandate for emergency relief and development activities, to institutional donors. HAP certification means providing external auditors with access to the organization's mission statement, accounts and control systems, allowing greater transparency in operations and overall accountability.[158]

Sphere standards are based on two core beliefs. First, that all possible steps should be taken to alleviate human suffering arising out of calamity and conflict, and second, that those affected by disasters have a right to life with dignity and therefore a right to assistance. Sphere standards guide a broad process of collaboration and an expression of commitment to quality and accountability. Humanitarian Charter identified minimum standards to be maintained in disaster assistance in each of five key sectors (water supply and sanitation, nutrition, food aid, shelter, and health services). The Sphere standards board has fully endorsed the CHS (see below).[159]

The Core Humanitarian Standard on Quality and Accountability (CHS) is a voluntary code that describes the essential elements of principled, accountable, and quality humanitarian action. CHS Certification is a four-year cycle and is open to CHS Alliance members and non-members. It attests that an organization or any part of it that has requested the certification, meets the requirements of the Core Humanitarian Standard (CHS).[160]

Responses for the acknowledgement and certification of all three above-mentioned are depicted in Table 14.

In Cambodia, responses for certification and acknowledgement of HAP are very low for government organizations and high for LNGOs. Responses for acknowledgement of Sphere standards are high for both sectors. Certification of CHS is very low for both sectors. Responses for acknowledgement of CHS are low for the government sector but high for LNGOs.

In Myanmar, responses for LNGOs indicate low acknowledgement of HAP and very low acknowledgement of both Sphere standards and CHS.

158 http://www.hapinternational.org/

159 https://ec.europa.eu/echo/files/evaluation/watsan2005/annex_files/Sphere standards/SPHERE STANDARDS4%20-%20What%20is%20Sphere standards.pdf

160 https://www.chsalliance.org/files/files/Resources/Standards/2010-hap-standard-in-accountability.pdf

In Nepal, responses for certification of HAP and CHS, as well as acknowledgement of Sphere standards are very high for the government sector. In the LNGO sector, acknowledgement of HAP and Sphere standards is moderate, and CHS acknowledgement is low.

In Pakistan, responses for certification are very low for HAP and CHS for both government and LNGO sectors. Responses for acknowledgement of HAP are very high for LNGOs, and high for the government sector. Acknowledgement is very high for Sphere standards in both the sectors.

In the Philippines, certification and acknowledgement is very low for HAP, Sphere standards, and CHS in the government sector. In the LNGO sector, certification is moderate but acknowledgement is very high for HAP and CHS. Response for acknowledgement is also very high for Sphere standards for LNGOs.

In Sri Lanka, certification is very low for HAP and CHS in the LNGO sector. Responses for acknowledgement of HAP and CHS is moderate, while acknowledgement for Sphere standards is very low.

Role of INGOs

In Cambodia, INGOs are key contributors in enhancing technical capacity, and providing financial support and leadership for local partners. Humanitarian Response Forum (HRF) has taken a leading role in providing advocacy and improving knowledge and awareness on DRR for local networks. INGOs expressed concern about the inadequate communications and logistics in emergency response.

In Myanmar, INGOs, which were small in number in the 1990s, have increased their presence in the aftermath of Cyclone Nargis in 2008, and since the formation of the new government in early 2011. They are working in humanitarian response and longer-term development in a multitude of sectors, including environment, health, education, livelihoods, rule of law, advocacy, and civil society capacity building. INGOs expressed willingness to provide assistance for capacity building for both government and local humanitarian organizations. Accountability training was recommended for the government organizations, while emergency response training was recommended for LNGOs.

In Nepal, 'The Association of International NGOs in Nepal' (AIN) has 147 INGOs members as of 2017. In 2016, only 26 INGOs were members of the Disaster Management Working Group of the AIN. They contribute to capacity enhancement for DRM and climate change adaptation, and also the cluster system for disaster response.

In Pakistan, 'The Pakistan Humanitarian Forum' (PHF), represents 63 international aid groups working in various sectors.[161] However, the "Policy for Regulation of INGOs in Pakistan," which was announced on October 1, 2015, has restricted the work climate for many international groups.[162] The Ministry of Interior (MOI) took over the registration process for INGOs from the Economic Affairs Division at the Finance Ministry in 2015. The MOI chairs a multi-agency INGO committee that reviews applications — examining financial statements, tax returns, annual plans, and staff details — and conducts a security clearance. If an INGO's application is approved, they sign a memorandum of understanding, under which the organization agrees to seek new approvals before accepting funding from new sources or opening additional offices.[163]

In the Philippines, only one international humanitarian organization involved in emergency response activities participated in this study. 'The Philippine International Non-Government Organization Network' (PINGON) was formed in 2008. Initially it was a loose alliance of INGOs with humanitarian programs as a mechanism for organized INGO representation in the Humanitarian Country Team (HCT). Since

161 https://tribune.com.pk/story/1590449/1-ngos-pakistan-working-unauthorised-areas-state-minster-interior/
162 https://www.hrw.org/news/2017/12/16/pakistan-government-shutters-international-groups
163 https://www.devex.com/news/pakistan-uses-regulations-to-tighten-grip-on-ingos-91003

then, the network has become a dynamic, informal venue to more effectively coordinate the provision and delivery of humanitarian aid by INGOs in the Philippines during times of major disasters and emergencies. PINGON also collectively advocates for appropriate actions on key humanitarian issues confronting the most vulnerable sectors in the country.[164]

In Sri Lanka, the INGOs participating in this study were active in humanitarian response during the civil war when the cluster approach was operational which was phased out by 2013. In the aftermath of the response efforts for the 2016 floods, which drew much criticism due to the way in which response and relief efforts were handled by the government, a voluntary emergency response plan was put into operation convened by the UN Resident Coordinator's Office and Chair of the Humanitarian Country Team (HCT) to complement the government-led response in Sri Lanka. The emergency response plan outlines the support from UN agencies and local and international NGOs during emergencies.[165]

The INGO perceptions captured in the survey revealed several areas of concern for humanitarian response. These are mainly the absence of a central data base for emergency response; lack of a national platform for information sharing for effective coordination; inadequate coordination between government organizations; weak leadership for operational activities during emergency management; overlapping mandates of DMC and NDRSC impeding effective response; and lack of adequate training for armed forces on humanitarian action.

Role of Private Sector and Media

In Cambodia, due to limited responses received from private sector organizations, a more comprehensive assessment is required for understanding the role and involvement of the private sector in the humanitarian sector. However, the participation of a few private sector organizations in focus group discussions and the survey revealed that the private sector interest in emergency response is low and is limited to providing loans and NFRIs to stakeholders affected. There is also poor coordination with other humanitarian partners in the country.

In Myanmar, thirty-four respondents from the private sector and the media participated in KIIs. Private sector actors such as the Union of Myanmar Federation of Chambers of Commerce and Industry (UMFCCI) and various business and trade associations are playing an increasingly important role in disaster relief, complementing the limited technical and financial capacities of the government. However, their actions have not been properly coordinated. There are no formal channels for communication with government entities during disasters apart from *ad hoc* forums. The private sector is not active in disaster preparedness and mitigation. The media does, however, play a role during emergencies by disseminating information and providing a voice for the affected.

In Nepal, the private sector is recognized as having resources (e.g., financial, human resources, and outreach) particularly for post-disaster response. It also has the capacity to gather immediate disaster and damage information. The sector consists of one of the largest networks to provide recovery tools with minimum investments. The survey responses revealed the willingness of the sector to contribute to both pre-, during, and post-disaster activities. Discussions regarding the method for their engagement in disaster management is currently taking place. With regards to the media, key areas of engagement that were widely agreed upon were information creation and dissemination.

In Pakistan, distributing food items and medicines, providing shelters, supporting livelihood recovery, and providing financial support to the affected are the key areas of intervention by the private sector during

164 https://www.humanitarianleadershipacademy.org/humanitarian-leadership-academy-philippine-international-ngo-networks-51st-member/

165 http://www.colombopage.com/archive_17A/Jun02_1496422485CH.php

emergency response. The media was found to be mainly contributing towards information dissemination and supporting relief material collection.

In the Philippines, 16 private and media organizations participated in the study. Most organizations do not have strategic emergency plans. However, they do have institutional policies for emergency response. All surveyed organizations distributed food as part of their emergency response activities. They reported an above-average level of coordination with the government and humanitarian cluster for emergency response. They are also involved in fundraising activities.

In Sri Lanka, the private sector and media organizations undertake distribution of medicines, food items, and non-food items. After the 2016 flood, Dialog mobile company held a national campaign for customer donations, and generated LKR 16.53 million. They tripled this amount and contributed a total of $330,000 USD. The funds were used for building houses for the displaced. Other private companies and volunteer organizations gave support through relief transportation or relief provision.[166]

With regards to the media, every privately-owned media channel visited the affected areas to provide updates on the incident. Information on how many were affected, the rescue efforts by the armed forces, and where victims were taken for temporary shelter etc. were reported. Most media channels collected and distributed relief items. However, the main focus of some privately-owned TV channels was disseminating information on aid distribution carried out by their own channels. These attempts to boost their brand image in a time of crisis were criticized as unethical by some.[167]

A notable Private Public Partnership Initiative in Sri Lanka is the 'Disaster and Emergency Warning Network' (DEWN) developed by mobile vendor Dialog in collaboration with University of Moratuwa (UoM) Mobile Communications Research Laboratory and Microimage, under a research and development project. It was undertaken immediately after the 2004 tsunami and uses GSM communication technologies and devices. It is compliant with the internationally accepted common alerting protocol (CAP). When information is received by the DMC, the information is verified, and customized alerts with text message and recipients specified are issued. Messages can be received by mobile phones or specially developed DEWN alarm devices. These devices contain a loud siren, a flashing lamp, an LCD display to show the trilingual message, a radio, and an inbuilt call-back facility. On January 30, 2009, the DMC together with Dialog and other partners launched DEWN as Sri Lanka's first mass alert early warning system, after completing a successful pilot period. It is currently in operation.

Role of the Academia

The role of academia is traditionally accepted as one of knowledge development in academic disciplines through implementing teaching curriculum at undergraduate and post graduate levels, as well as carrying out research to build upon the existing knowledge base. DRM *per se* is not yet a mainstream academic discipline in the target countries. DRM concepts, where relevant, have been incorporated into existing disciplines such as civil engineering, climate science, environmental science, geological science, GIS, and remote sensing, etc. Socio-economic aspects related to disaster risk management appear to be low in terms of focus for academic curricula and research. Development studies have integrated aspects of DRM governance.

The relevance of opening higher educational opportunities for youth has been voiced recently by several authors emerging from different continents. Risk Education Network, Africa[168] suggests that, "*Higher education institutions*

166 http://www.readme.lk/flood-relief-tech-2017/

167 http://www.hirunews.lk/hirutvnews/4293 ; https://www.youtube.com/watch?v=QEB-W0sO-Vw

168 http://www.riskreductionafrica.org/assets/files/PPU-brochure_WEB-2.pdf

(HEIs) are crucial for driving disaster risk into academic and development mainstreams. They can produce graduates with the skill-sets and capacities to tackle local risks. Professional curricula that integrate disaster risk considerations can transform risk management practice. HEIs can achieve breakthroughs in risk knowledge through innovative post-graduate studies and multi-partner research". Miranda, N.L.J. (2014) writes, "*Higher education (e.g. an Institute for Integrative Disaster Risk and Impact Management) must aim at preparing professionals to better contribute to the overall effort of promoting societal resilience and global security, spanning all areas.*"[169]

According to Vallaeys, the newly emerging concept of university social responsibility (USR) that has evolved from the concept of corporate social responsibility, points to new directions of a university´s relationship with society, such as the revision of the curricula in light of socioeconomic and environmental challenges that we face today.[170] These concepts, though recent, emphasizes the need to open up wider opportunities for higher education to harness the higher rates of youth literacy and new generation strengths of ITC as catalyzers of resilience building for an unknown future of disasters that could be triggered by climate change.

In Cambodia, eight universities are attempting to advance climate change education through the launch of a climate change curriculum developed with support from the United States Agency for International Development (USAID).[171] A Masters-level curriculum developed by the Royal Phnom Penh University, in collaboration with ADPC under the Disaster Resilience Leadership Program of Tulane University USA, and with funding from the Bill and Melinda Gates Foundation, is yet to bear fruit. Currently it is being re-vitalized through integration of inter-departmental courses.

In Myanmar, the National Center for Graduate School of International Cooperation Sties of Kobe University has integrated DRM into the courses it offers. The Department of Disaster Management of the Ministry of Social Welfare, Relief and Resettlement also offers a course on DRM at the sub-national level, which aims to develop the capacity of government officials on Disaster Management.

In Nepal, the government has taken an initiative to revise formal curriculum to include updated information about climate change under the USAID technical program, "Mainstreaming Climate Change Risk Management into Development (MCCRMD)." Since 2014, MCCRMD has been working with the Ministry of Education and three universities to integrate new information on climate change into secondary and university curriculum. Tribhuvan University and Kathmandu University under the Asian University Network of Environment and Disaster Management (AUEDM) have integrated disaster management and climate change adaptation into their curriculum.[172] Additionally, Tribhuvan University offers a masters-level course in Crisis Management.

In Pakistan, the Disaster Research Institute (DRI) of Preston University offers Diploma courses in DRM and conducts research into DRM. In addition, a large number of universities

offer specialized courses related to DRM, DRR, and GIS. However, there is a low rate of enrollment due to the lack of job opportunities in these fields. In addition, as a part of their degree programs, several universities conduct research related to disaster management.

The survey revealed that 67% of universities are conducting research on Disaster Risk Reduction, Earthquake Engineering, Disaster Risk Assessment, Climate Change, MHVRA, Flood Management, CBDRM, DRR Policy, Fire Engineering, and Gender Mainstreaming. These

169 http://www.philstar.com/science-and-technology/2014/07/31/1352040/strengthening-disaster-risk-and-impact-management-phl

170 http://www.guninetwork.org/articles/defining-social-responsibility-matter-philosophical-urgency-universities

171 http://www.phnompenhpost.com/national/climate-courses-be-offer

172 http://www.asiapacificadapt.net/adaptationforum/sites/default/files/3.%20Rajib%20Shaw%20ASEAN.pdf

research outputs are published in journals, presented at conferences, and uploaded on websites. Central Bicol State University of Agriculture (CBSUA) offers a master's degree in Incident Command System, while its School of Business Administration offers a master's in business administration, specializing in DRM.

In the Philippines, the University of the Philippines Open University (UPOU) offers an online non-formal course on Responding to Climate Risks in Agriculture and Natural Resource Management (RCRANRM).

In Sri Lanka, several universities offer diploma courses related to DRM. The Post Graduate Institute of Science of the Peradeniya University and the Institute of Human Resource Advancement, University of Colombo, offer a master's course in DRM.

Regional Initiatives

Cambodia, Myanmar, and the Philippines are members of the Association of Southeast Asian Nations (ASEAN). Nepal, Pakistan, and Sri Lanka are members of the South Asian Association for Regional Cooperation (SAARC).

ASEAN

In 2005, ASEAN states signed the ASEAN Agreement on Disaster Management and Emergency Response (AADMER). The agreement led to the establishment of the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) in 2011 in Bali, Indonesia. The AHA Centre facilitates cooperation and coordination among ASEAN member states with the UN and INGOs for disaster management and emergency response.[173]

The ASEAN Regional Disaster Emergency Response Simulation Exercise (ARDEX) held in member countries, practices, evaluates, and reviews the ASEAN Standby Arrangements and Standard Operating Procedures in responding to disasters in order to improve ASEAN's collective emergency response mechanism.

ASEAN established the ASEAN Technical Working Group on Pandemic Preparedness and Response in 2008 and adopted the ASEAN Work Plan for multi-sectoral Pandemic Preparedness and Response.

MRC

The Mekong River Commission (MRC) through its Flood Management and Mitigation Program (FMMP) and the Drought Management Program (DMP), assists four countries (Cambodia, Thailand, Vietnam, and Laos) on flood and drought forecasting and implementation of regional drought and flooding mitigation and adaptation strategies. Flood forecasting is managed by the Regional Flood Management and Mitigation Centre in Phnom Penh.[174]

SAARC

Considering the regional dimensions of natural disasters, SAARC had commissioned a comprehensive Regional Study on the Causes and Consequences of Natural Disasters.[175] A SAARC Meteorological Research Centre was established in Dhaka, Bangladesh in 1995 and a SAARC Coastal Zone Management Centre was set up at Male, Maldives in 2004. In 2005, SAARC Disaster Management Centre Management was established in New Delhi, India.

The Centre has been functional since October 2006. Agreement on Rapid Response for Natural Disasters (ARRND) is a regional disaster management agreement that reinforces existing mechanisms for rapid response to disasters. ARRND obliges SAARC Member States to take legislative and administrative measures to implement agreement provisions. These include measures for requesting and receiving assistance; conducting needs assessments; mobilizing equipment, personnel, materials

173 https://ahacentre.org/about-us/

174 http://www.mrcmekong.org/about-mrc/
175 http://www.saarc-sdmc.org/

and other facilities; making regional standby arrangements, including emergency stockpiles; and ensuring quality control of relief items. ARRND was signed by SAARC Member States in 2011 and is in the process of being ratified.[176]

Conclusion

Limitations

The conclusion and the recommendations that follow focus on the objective of the survey to assess the humanitarian capacity to manage humanitarian crisis at the institutional, organizational, strategical, and operational levels in the target countries. Both the conclusion and recommendations made are within the scope of the project objectives, and therefore do not cover a holistic DRM outlook.

An Emerging Paradigm

Evident at the regional meeting of the six country delegates in Siem Reap, Cambodia in February 2017, there is an emerging desire among respective governments, LNGOs, and the private sector to be better prepared and play a larger role in humanitarian response and recovery. This was also clear based on the findings from the consequent FGDs and KIIs during the Baseline Surveys and Assessment.

Prevalent Vulnerability

The six countries show considerable variation of in terms of Prevalent Vulnerability Indicators (PVI). These indicators assist in measuring different scales of emergency preparedness required in the respective countries. Understanding such influences requires further investigation. The scope of the present study does not allow for the formulation of country-specific weighted bench mark indices for PVI that may provide comparative inferences, though they would be a desirable tool to measure changes in vulnerability over time. Additionally, available studies have analyzed the direct influence of these indicators on emergency response and coping capacities of communities. Therefore, the main purpose of PVI in this report is to facilitate subjective perceptions of vulnerability differences in the six countries.

Hazards, Disasters, and Climate Risk of the Selected Countries

UNISDR recommended collecting data on Annual Average Loss (AAL) as an indicator of risk and resilience in order to highlight future losses that a country may experience.

Multihazard Risk Index

The Global Assessment Report 2015 (GAR15) endorsed the use of AAL in assessing risk and has produced global multihazard risk indices for individual countries based on cyclone winds, earthquakes, floods, storm surges, and tsunamis. Six categories have been introduced with gradually increasing AAL. The Philippines falls into the highest AAL category. Pakistan and Myanmar fall into the second highest category. Cambodia falls into the third highest category, while Nepal and Sri Lanka fall into the fifth category.

INFORM Risk Index

The INFORM Risk Index, which uses 50 indicators based on three dimensions of hazard and exposure, vulnerability, and lack of coping capacity places Myanmar, Nepal, Pakistan, and the Philippines in the "high risk" category, and places Cambodia and Sri Lanka in the "medium risk" category.

176 https://reliefweb.int/sites/reliefweb.int/files/resources/Disaster%20Response%20in%20Asia%20Pacific_A%20Guide%20to%20Intl%20Tools%20Services.pdf

Climate Change Vulnerability

All six countries are vulnerable to different degrees of climate change risk. The changing climate is leading to an increase in the frequency of extreme events. The exacerbated impact from these extreme events has been devastating, as evident from Typhoon Nargis in May 2008 in Myanmar, Typhoon Ketsana in September 2009 in Cambodia, the July 2010 floods in Pakistan, the November 2013 Typhoon Haiyan in the Philippines, and recent unusual flood impacts in Nepal and Sri Lanka. These events are a reminder that extreme events can be overwhelming for in-country humanitarian ecosystems.

Verisk Maplecroft Climate Vulnerability Index (2016) found that the Philippines is the most vulnerable of the six countries.[177] The Long-Term Climate Risk Index (CRI) formulated by Germanwatch, based on impacts for the period 1996-2015, places Myanmar at number 2, the Philippines at number 5, and Pakistan at number 7 in a list of the 10 most affected countries for that period.[178]

Policy, Legal, and Institutional Assessment

All six countries appear to have achieved significant progress during the period of 2005-2015 in implementing Priority 1 of the Hyogo Framework for Action. There is adequate legal policy and institutional frameworks for disaster risk management in all six countries. However, in Cambodia, NCDM is perceived as limited in terms of both capacity and resources to carry out its core responsibilities of coordinating a multi-agency effort required for disaster risk management. Furthermore, effective implementation of existing DM laws and policies are relatively low.

Legal Status and Organizational Structure

The legal status and organizational structure of the majority of government and non-government organizations in the humanitarian ecosystem sampled were adequate and were regulated by legal enactments in all six countries. In Myanmar and the Philippines, there are informal organizations which have no mandatory requirement to adhere to existing regulations and are exempted as previously detailed.

Financial Management and Documentation of Administrative and Operational Procedures

Perception of financial management is high in all countries except in Myanmar's LNGO sector. There is scope to improve the documentation of administrative and operational procedures in the government sector in Pakistan and Myanmar, as well as for the LNGO sector in the Philippines and Myanmar. There is a positive perception on the adequacy of documented procedures for both administrative and financial policies across all countries..

Gender

All six countries have adequate policy environments that give attention to gender equity, but may need to strengthen their translation into action and operationalizing these policies. Gender sensitive workplace policies and workplace harassment policies are adequate in the LNGO sector in Cambodia and Nepal, but they require strengthening in the government secor. Strengthening is required in both government and LNGO sectors in the other target countries.

At the "*Regional Sensitization Workshop on Integrating Gender and Rights Based Approaches into APP Action Plans*" held on April 23-24, 2018, consensus was reached on the following:

177 https://reliefweb.int/sites/reliefweb.int/files/resources/verisk%20index.pdf
178 https://germanwatch.org/fr/download/16411.pdf

- Recognition of the need to be mindful about risks of exclusion and discrimination and putting corrective measures in place to prevent/mitigate of such risks.
- The need to harness the capacities of women and people from diverse groups in planning processes.
- The need to create a mechanism to prevent Sexual Exploitation and Abuse (SEA) by humanitarian workers as part of the overall response strategy in organizations.
- The need to adopt a rights-based approach, to reflect on human rights frameworks adopted in each country.

Staff Orientation

With the exception of Cambodia, perceptions regarding the level of staff orientation on administrative and operational procedures is positive. The perceptions of existing monitoring and evaluation processes are high for the government sector in Sri Lanka, Nepal, Myanmar, and the Philippines respectively, but requires strengthening in Cambodia and Pakistan. Perceptions among the LNGO sector reveals a need for strengthening monitoring and evaluation in Cambodia and Myanmar.

Funding of DRM

Myanmar, Nepal, Pakistan, and the Philippines have dedicated funds for disaster risk management, while Cambodia and Sri Lanka depend on annual budget allocations. All six countries have limited risk transfer instruments, which is an area that requires strengthening. Institutional risk insurance for staff working in hazard-prone areas requires improvement in all countries except Nepal.

Technical Capacity for Emergency Response

Staff Adequacy

There are opportunities for improvement when it comes to staff adequacy for emergency response in both government and LNGO sectors of all six countries. Responses highlighted the need to increase staff numbers, as well as the need to enhance capacities required to perform humanitarian action.

Emergency Response Plans

Perceptions of the availability of emergency response plans for the government sector is high in all the countries, however, the development of emergency response plans needs to be enhanced for the LNGO sector. Both sectors would benefit from capacity building for development and review of emergency response plans.

SOPs

Perceptions of the availability of SOPs is high in the government sectors of all target countries except Sri Lanka. Strengthening is required in the LNGO sectors of all six countries.

Simulation Drills

Perceptions in both government and LNGO sectors regarding conducting of simulation drills is highest in the Philippines, Nepal, Myanmar, and Sri Lanka in that order. In contrast, Pakistan and Cambodia show a need for improvement.

The above responses are related to generic organizational plans, SOPs, and simulations. Further study is needed to assess whether hazard-specific appendices are formulated for the existing response plans, where hazard agents have dissimilar characteristics. There is also a need to advocate for the formulation of emergency response plans for development sectors. A critical area is business continuity of micro, small, and medium-sized enterprises which contribute significantly to the national gross domestic product and livelihoods.

In Cambodia, the NCDM has produced technical guidance on contingency and disaster planning at municipality, province, district and khan[179] levels but not at the commune level.[180]

Lessons from the 2000 flood response, Typhoon Ketsana, and the 2011 floods, highlighted the need to provide support to build a strategic framework for coordinating community-based interventions to reduce vulnerability of at-risk communities to floods in Cambodia.[181]

In Myanmar, the Humanitarian Country Team (HCT), regularly updates the inter-agency Emergency Response Preparedness (ERP) Plan to support the Government of the Union of Myanmar in preparing for, and responding to, any hazards that may affect the country. The ERP Plan has four main components: i) Risk Assessment, ii) Minimum Preparedness Actions, iii) Standard Operating Procedures (SOP), and iv) Contingency Plans for the initial emergency response. The preparedness package also includes the updated Multi-Sector Initial Rapid Assessment (MIRA) methodology, the Scenario Plan for a cyclone in Ayeyawaddy, and documents the cash transfer programming in new emergencies.

In Nepal, UNDP supports the Strengthening Emergency Preparedness and Response (EPR) plans and systems. UNDP is working with Ministry of Home Affairs to support the operationalization of the National Emergency Operating Center (NEOC), a central body to connect the increasing number of Regional, District, and Municipal EOCs. Simulation exercises are being conducted in 16 districts to develop the capacity of the DEOC's to be better prepared to respond to disasters. The program focuses on seismic hazards in Kathmandu Valley, and is working with five municipalities and a range of stakeholders to develop an earthquake emergency response plan for the area.[182]

In Pakistan, the 2015 Humanitarian Preparedness Plan focuses on the following clusters: education, food security, logistics, health, nutrition, protection, shelter and non-food items (NFI), and water sanitation and hygiene (WASH). Emergency telecommunications can also be activated as required. If a request is received from the Government of Pakistan, this Inter–Agency Preparedness Plan will be activated by the Resident Coordinator on the recommendation of the HCT.[183]

In the Philippines, the National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028 serves as the national guide on how sustainable development can be achieved through inclusive growth while building the adaptive capacities of communities; increasing the resilience of vulnerable sectors; and optimizing disaster mitigation opportunities with the aim of promoting people's welfare and security towards gender-responsive and rights-based sustainable development. It outlines the activities aimed at strengthening the capacity of the national government and the local government units (LGUs) together with partner stakeholders to build the disaster resilience of communities.[184]

In Sri Lanka, the World Health Organization (WHO) provided technical expertise to the Ministry of Health (MoH) to strengthen the health sector emergency preparedness and response plan, and develop more resilient health systems at the district level in the aftermath of the floods and landslides, as health facilities and staff are essential lifelines for communities during emergencies.[185]

Capacity Building

A considerable gap exists between the desirable and achieved capacity building in both government and LNGO sectors. The types and numbers of staff training and capacity building

179 The districts in Phnom Penh are called ***Khan***
180 https://www.researchgate.net/publication/311900413_Disaster_Management_Planning_in_Rural_Cambodia
181 https://www.adb.org/sites/default/files/linked-documents/46009-003-sd-02.pdf
182 http://www.np.undp.org/content/dam/nepal/docs/projects/cdrmp/UNDP_NP_CDRMP%20Flyer%20EPR.pdf
183 https://reliefweb.int/sites/reliefweb.int/files/resources/pakistan_hct_humanitarian_preparedness_plan_2015.pdf
184 https://www.preventionweb.net/english/policies/v.php?id=35457&cid=135
185 http://www.searo.who.int/srilanka/documents/hse_floods/en/

carried out are limited and the perceived needs are also different across the countries. A gender disaggregated overview of opportunity provided for capacity building of male and female staff vary country-wise and sector-wise. In Cambodia and Sri Lanka, female staff have had better access to opportunities for capacity building in both government and LNGO sectors. In Myanmar, males and females have had even opportunities in both sectors. Government sector male staff in Nepal, Pakistan, and the Philippines have had more opportunities, while females in the LNGO sectors have had slightly more opportunities for capacity building. Additional in-depth county-specific needs analyses are recommended prior to prioritization and implementation of capacity building initiatives.

National governments have contributed significantly for capacity building in all countries except Cambodia. INGO contributions have been highest in Nepal, Pakistan, and Cambodia in that order. LNGO contributions have remained at a relatively comparable level in all countries but are lower than government and INGO contributions. Contributions for capacity building from UN organizations have been low across all countries.

Coordination between Stakeholders

Responses on a Likert-type scale found that perception of effectiveness of coordination during emergency response was positive for both government and LNGO sectors in all countries except Sri Lanka. While government perception was positive, the LNGO perception was negative, indicating inadequate coordination.

All countries have institutionalized the cluster approach for emergency response except Sri Lanka. Currently in Sri Lanka, a system of voluntary emergency plan exists coordinated by the Chair of the HCT.

Despite the positive perceptions from the survey sample, in Cambodia INGOs have expressed their concern about the inadequate communications and logistics in emergency response.

In Myanmar, the Inter-Agency Emergency Response Preparedness (ERP) Plan prepared by the HCT in collaboration with the government, aims to facilitate coordinated and effective support to people affected by humanitarian crises.[186]

In Nepal, a lesson learned in the aftermath of the 2015 earthquake has been that national institutions were burdened with having to coordinate relief items sent from outside the country that did not match the needs of the affected populations. This had a seemingly negative affect on the in-country relief coordination.[187]

In Pakistan, in line with Inter-Agency Steering Committee (HCT) guidelines, the HCT has identified the cluster approach as the chosen response strategy in order to ensure a coordinated emergency response. The HCT plans to coordinate activities as close to the operational base as possible with coordination structures devolved to district levels. District authorities and line ministry representatives will be included where possible. At provincial levels, the teams will work closely with Provincial Disaster Management Authority (PDMA/FDMA) and other key stakeholders.[188]

In the Philippines, although the perception of the effectiveness of coordination was high in the survey findings, the validation workshop revealed the inadequacy of coordinated response. Many local government units (LGUs) lack emergency preparedness plans, which creates obstacles for proper coordination. The validation workshop identified the lack of participation of grassroots organizations as a significant challenge in coordination and implementing the cluster approach and found that a clearly defined mandate and a standardized method for reporting and coordination needs to be put in place.

186 https://reliefweb.int/report/myanmar/hct-myanmar-inter-agency-emergency-response-preparedness-erp-plan-june-2017
187 François Grünewald and Anne Burlat, (2016), Nepal Earthquake: A Rapid Review of the Response and a Few Lessons Learnt
188 https://reliefweb.int/report/pakistan/pakistan-2015-humanitarian-preparedness-plan-23-july-2015

In Sri Lanka, the flood PDNAs for 2016 and 2017 point to gaps in emergency response coordination, demonstrating the need for strengthening these mechanisms among the various sectors.

Humanitarian Standards

Affiliation with humanitarian standards is variable across the six countries. Certification is low despite the high acknowledgement for Cambodia LNGO and Nepal government sectors. High levels found for affiliation/acknowledgement in the Nepal and Pakistan governments and LNGO sectors, and the Philippines and Cambodia LNGO sectors indicate that humanitarian standards are a good candidate for regional capacity building initiatives to facilitate members of the humanitarian ecosystem in Asia towards certification of Humanitarian standards amongst the relevant stakeholders.

Knowledge Management

Knowledge management is an area of focus in SFDRR, where it aims *"to promote real-time access to reliable data, make use of space and in situ information, including geographic information systems (GIS), and use information and communications technology innovations to enhance measurement tools and the collection, analysis and dissemination of data."*[189]

The Asian Preparedness Partnership (APP) aspires to become a knowledge hub for south-south exchange of disaster risk management knowledge products. To ensure consistency of such products it is desirable to upgrade the know-how of knowledge production and archiving for sharing. Although only Cambodia and the Philippines have indicated capacity building needs in data base management, APP aspirations may call for enhanced capacity on knowledge management. Myanmar, Pakistan, the Philippines, and Sri Lanka expressed a need for capacity building for risk communication which is an operational skill area for knowledge dissemination.

Recommendations

Response Planning

1. Review existing emergency response plans and SOPs to enhance them with hazard-specific recommendations where relevant

2. Carry out advocacy to formulate response plans for development sectors, with a special focus on business continuity if impacted by disasters

Capacity Development

1. Implement an in-depth training and capacity building needs analysis for prioritizing areas of future intervention. The findings in this report highlight the need for courses on Humanitarian Standards, Camp Management, Emergency Response Planning, and Knowledge Management.

2. Complete Training-of-Trainers (ToTs) in all countries to ensure quality of training and capacity building initiatives

3. Audit all existing training courses and standardize all new courses for quality assurance

4. Explore the potential of open learning for accreditation of standardized courses to issue Certificates of Competency in collaboration with universities or professional bodies that would enable participants to seek credit transfer to pursue university certificates or diplomas. Receiving such professional recognition may serve as an incentive for humanitarian workers to build their capacities for more effective delivery of humanitarian services.

189 https://www.unisdr.org/we/inform/publications/43291

Coordination of Stakeholders

1. Implement the SFDRR call for National and Local Coordinating Platforms: *"To establish and strengthen government coordination forums composed of relevant stakeholders at the national and local levels, such as national and local platforms for disaster risk reduction…"*[190]

2. Provide support to the governments of the six countries to deliver more opportunities to engage local humanitarian actors and the private sector in an effective manner in the Inter-Agency Humanitarian coordination mechanisms in each country

Knowledge Management

1. Provide specialized training and capacity building for knowledge management and production, as well as for developing a repository of knowledge products

2. Strengthen South-South learning and sharing platforms for knowledge products at sub-regional, regional, and global levels

Knowledge Building

1. Convene a regional forum of universities currently engaged in offering disaster and climate risk management curricula to share experiences and formulate an action plan for a Regional University Partnership to become the research and knowledge building arm of the Asian Preparedness Partnership

Orientation for Policy Makers

1. Formulate a short orientation course for policy makers with consensus from the apex body for DRM in each country to enhance political will and to facilitate the aforementioned recommendations.

190 https://www.unisdr.org/we/inform/publications/43291

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