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Disaster Preparedness and Management in Nepal

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We hope that the information provided to CFE-DM through this report will help to improve Nepal's disaster response capacity before future crises strike. We thoroughly enjoyed undertaking this project and met the most inspirational people during our fieldwork. We hope that this project can be our way of giving back.

Acronyms and Initialisms

AAR	After Action Report
APF	Armed Police Force, Nepal
CADRE	Community Action for Disaster Response
CBDRR	Community-Based Disaster Risk Reduction
CFE-DM	Center for Excellence in Disaster Management and Humanitarian Assistance
CNDRC	Central Natural Disaster Committee
DoD	(U.S.) Department of Defense
DREE	Disaster Response Exercise and Exchange
DRR	Disaster Risk Reduction
GoN	Government of Nepal
Hu-MOCC	Humanitarian-Military Operations Coordination Center
MNMCC	Multinational Military Coordination Centre
MoHA	Ministry of Home Affairs
MTT	Mobile Training Team
NASA	(U.S.) National Aeronautics and Space Administration
NDRF	National Disaster Response Framework
NDRRM	National Disaster Rapid Response Mechanism
NEOC	National Emergency Operation Center
NGO	Non-Governmental Organization

NRRC	Nepal Risk Reduction Consortium
NTC	Nepal Telecom
OSOCC	On-Site Operations Coordination Centre
SAARC	South Asian Association for Regional Cooperation
SAR	Search and Rescue
SIPA	School of International and Public Affairs, Columbia University
SOP	Standard Operating Procedures
UN	United Nations
UN OCHA	United Nations Office for the Coordination of Humanitarian Affairs
UN-CMCoord	United Nations Humanitarian Civil-Military Coordination
UNICEF	United Nations Children's Fund
UNDAC	United Nations Disaster Assessment and Coordination Team
VDC	Village Development Committee

Executive Summary

Nepal, a landlocked country predominantly situated in the Himalayas, is among the most disaster-prone states in the world. In 2015, a 7.8 magnitude earthquake killed approximately 9,000 people and injured 22,000. Following the disaster, the Government of Nepal initiated immediate relief efforts, mobilizing multiple government agencies, 90% of the Nepali Army, local communities, volunteers, youth groups, approximately 100 international search and rescue teams, over 450 aid organizations, and eighteen foreign militaries.

This report will identify the areas of strength and areas of improvement that could strengthen Nepal's effective disaster management and interagency communication and coordination in disaster planning and response. Through an extensive literature review of existing After Action Reports from the 2015 Nepal Earthquake response, the team has framed its approach in conjunction with two of the five Flagships, or priority areas, identified by the Nepal Disaster Risk Reduction Consortium. First, Emergency Response and Preparedness Capacity encompasses the development of federal readiness and communication among civil-military organizations and between federal, provincial, and local levels. Second, Integrated Community-Based Disaster Risk Reduction/Management comprises the institutionalization and development of local response capacities.

The literature review revealed significant observations that warranted further inquiry, such as the challenges to civilian-security force[1] communication and coordination, the uncoordinated and underprepared international response effort, the technological and structural barriers that inhibit effective subnational response, and the pressing need to consider vulnerable populations. From Flagships 2 and 4 and in conjunction with these findings, the team developed a qualitative questionnaire with quantitative elements to be used in interviews and focus groups. These interviews were conducted in Kathmandu, Nepal, over the course of one week with officials from the Government of Nepal, Nepali security forces, the United Nations, and non-governmental organizations.

[1] The research team has chosen to use the term "civilian-security force" in lieu of "civilian-military" to describe communication and coordination between civilian agencies and all three of Nepal's security forces: the Nepal Police, the Armed Police Force, and the Nepali Army. This term was recommended for use to the team by in-country personnel, as it better suits Nepal's political and security context, in which the three forces operate.

The results from these interviews coincided with the findings from the literature reviews. While all three Nepali security forces—the Nepali Army, Nepal Police, and Armed Police Force—act as disaster responders and maintain a high level of trust among civilians and officials, particularly the Nepali Army, the delineation of responsibility remains unclear. The three security forces also require more funding, technology, and comprehensive disaster training. Not only can these measures improve their individual response capacities, but they may also cultivate greater civilian-security force and cross-security force communication and coordination, improving disaster response. Further, with some exceptions, the international community, including foreign military responders, were inadequately prepared and lacked sufficient knowledge about Nepali structures and entities. These challenges can be mitigated through increased previously established bilateral and multilateral agreements and enhanced disaster response exercises and exchanges that create mutual awareness and understanding of protocols and responsibilities.

The adoption of the 2015 Constitution that transitions Nepal into a Federal Democratic Republic State also creates new opportunities for local governments to exercise greater control over their disaster preparedness and management strategies. However, concerns remain about whether the federal government will allocate sufficient funds and decentralize authority. These concerns can be addressed through the implementation of greater accountability measures between federal, provincial, and local levels of government that foster stronger intergovernmental communication, encouraging local officials to lead community-level preparedness.

Upon reviewing the results of the literature review and interviews, the team has created a set of key recommendations that aim to address these challenges and enhance Nepal's disaster preparedness and management capacities. Broadly, these recommendations align with several areas of disaster preparedness: domestic security force response, international response, technology and communication, and Nepal's transition to federalism. The team's key findings and recommendations are found in Table 1 on page 8.

Table 1: Key Findings and Recommendations [2]

Domestic Security Forces' Response

	Key Findings	Key Recommendations
1	The Nepal Police are the most dispersed and accessible to the public, yet are insufficiently trained for disaster response	Increase training as first responders and improve equipment to act decisively in the immediate aftermath of a disaster
2	The APF's roles and responsibilities are no longer current nor clear.	Provide clarification of roles and responsibilities within its existing disaster response mandate
3	The Nepali Army is best prepared to conduct disaster response but continue to face equipment and training constraints	Continue training and equipping personnel for the most difficult tasks associated with disaster response
4	The Nepali Army is the relatively removed from local communities compared to the Nepal Police and APF	Encourage platoon representatives to maintain contact with and develop relationships with municipal leadership and local civilians
5	Training Army personnel in remote areas of Nepal is difficult and costly	Create and disperse area-specific MTTs in the Nepali Army to conduct trainings across Nepal
6	The presence of representatives from all national security forces (NA, NP, APF) at district-level preparedness meetings helps to facilitate two-way communication	Sustain inclusive district and municipal level meetings, and expand this practice to the provincial level
7	All of Nepal's security forces tend to work in isolation of each other	Establish systems within the Nepal Police, APF, and Nepali Army for integration with each other and with local, provincial, and federal governments
8	DREEs conducted in coordination with international partners are effective methods of training and relationship-building	Continue and enhance DREEs conducted by security forces to include more participants and realistic exercises
9	Although Nepali Army liaisons exist during disaster response, consistent communication between Clusters and the Nepali Army prior to disaster remain difficult to sustain	Institutionalize relationships between the Nepali Army and various GoN and UN agencies, and NGOs to facilitate pre-disaster national and international-level communication for disaster preparedness
10	Nepali security force personnel oftentimes place themselves in risky situations during disaster response	Develop risk management and mitigation training to mitigate personnel danger

[2] This table can also be found in Appendix A of this report.

International Response

11	International response, writ large, was appreciated but not efficient	Evaluate potential responders and create bilateral agreements before an incident to ensure a Nepali-led response
12	Many international responders did not have adequate knowledge of the Nepali context and environment	Implement and improve training for international responders on the Nepali context and structures before a disaster strikes
13	International response efforts sometimes conflicted with pre-existing frameworks and policies created by the GoN and regional institutions	Create an identifier for regional responders who have attended SAARC training and prioritize their entry into country

Technology and Communication

14	The security forces do not have adequate contingency plans for communication and public outreach.	Improve communication capabilities and pre-existing systems between the GoN and security forces to build a communications contingency plan and early warning system
15	The security forces lack high tech equipment for disaster response	Pursue bilateral agreements for sharing of satellites and other technology for disaster preparation and response, as well as procuring corresponding training

Transition to Federalism

16	Municipalities lack budget and resources to effectively implement disaster management	Decentralize more of the federal disaster management budget down to the local level
17	There is mixed understanding of responsibilities at all levels of government	Clearly delineate responsibilities between tiers of government, and standardize responsibilities across provincial, district, and local governments when conducting disaster management trainings
18	The provincial level is often excluded from disaster management discussions and policies	Restructure the NDRF to better align with the seven-provinces model
19	Many stakeholders show skepticism of decentralization of disaster response during transition to federalism	Develop federal systems to educate local leaders of their responsibilities and supervisory control of small-scale disaster management in accordance with the GoN's DRR National Strategic Plan of Action
20	Newly established local elections seen as accountability measure	Enable information dissemination to the general public on civil disaster management capacity to inform voting

21	Quality of municipality preparedness heavily influenced by traits and knowledge of individual mayors	Conduct and publish regular audits on municipalities' disaster preparedness plans
22	Information sharing mechanisms insufficiently reach rural areas relative to urban areas	Expand information sharing mechanisms to improve access to best emergency management practices, particularly in rural areas

Background

The 2015 Nepal Earthquake[3]

On April 25, 2015, a 7.8 magnitude earthquake struck Nepal, causing almost 9,000 deaths, and over 100,000 injuries (Reid). The epicenter of the earthquake was approximately 50 miles northwest of Kathmandu, within Barpak, Gorkha district, and approximately nine miles deep. In addition to hundreds of smaller aftershocks over the next month, a final 7.3 magnitude aftershock hit on May 12, 2015 (Reid). The shallow nature of the earthquake and tremors caused significant damage within Nepal's capital region and villages in mountainous rural areas. Overall, thirty-one of the seventy-five districts within Nepal were affected, and fourteen were declared "severely hit," encompassing about one-third of the national population. More than 500,000 houses were destroyed, and 269,000 damaged (Bisri and Beniya 22). Estimates have placed economic losses at between 20-50% of Nepal's economy, totaling over US$9 billion (Cook et al. 535).

Due to its location, Nepal is one of the most disaster-prone states in the world. The high relief and rugged topography with steep slopes, high seismicity, and highly concentrated monsoon rainfall render Nepal as the 20th most disaster-prone country in the world, particularly vulnerable to climate change, earthquake, and floods (Nepal et al. 2). Data recorded from the Ministry of Home Affairs (MoHA) reflected a total of 22,372 disasters over a 45-year period: approximately 500 disastrous events annually (Nepal et al. 3).

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Domestic and International Response to the 2015 Nepal Earthquake

The first responders to the 2015 earthquake were local Nepali citizens and security forces. Communities conducted initial search and rescue (SAR), followed by the Nepal Police located in disaster areas (Ovesen and Heiselberg). People shared resources with one another, youth across Nepal mobilized to collect and disseminate aid, and non-governmental organizations (NGOs) used existing networks to provide information to military and humanitarian actors (Ovesen and Heiselberg).

Multiple reports state the initial activities undertaken by the Government of Nepal (GoN) followed the Standard Operating Procedure (SOP) and timeline detailed in the National Disaster Response Framework (NDRF), enacted in 2013. Nepal's Central Natural Disaster Committee (CNDRC) convened and made several major policy decisions within two hours of the disaster, then made an international appeal for assistance and mobilized relief funds within four hours. Subsequently, the CNDRC granted special authorities to Chief District Officers to make relief operations more effective and established a central command post headed by MoHA.

[3] Also commonly referred to as the 2015 Gorkha Earthquake

Domestic and International Responders

90,000

Nepali Army Soldiers were involved in relief efforts

18 out of 34

responding countries sent military support

The NDRF mandates the Nepali Army (NA) as the primary institution for coordinating multinational and bilateral humanitarian assistance. Due to the Nepali Army's ability to respond immediately to a disaster without formal activation, soldiers rapidly responded to the crisis as evacuators and performed immediate lifesaving measures. Approximately 90,000 Nepali Army soldiers, or 90% of the force, were involved in relief efforts, despite many being personally affected by the disaster (Case Study No. 1).

Requests for international assistance by the GoN were met by seventy nations when including those who contributed financial aid and by thirty-four countries through physical action, like immediate SAR personnel, medical teams, emergency relief teams, and material support to assist in relief efforts. Eighteen of the thirty-four responding countries also sent military support (Cook et al. 536). Indian foreign military teams were the first to arrive, doing so within the first twelve hours. U.S. Special Forces, who were conducting trainings in the area, also assisted in immediate response efforts (Elwood 9).

Many international organizations responded, including United Nations (UN) organizations, as well as smaller non-governmental organizations (NGOs) and companies contributing from the private sector. The United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) fulfilled key liaison roles between NGOs and responding security forces.

The National Emergency Operation Center (NEOC) under MoHA played a central role in national-level disaster management, while UN OCHA established the On-Site Operations Coordination Centre (OSOCC). However, delays in the OSOCC's establishment caused the Nepali Army's Multinational Military Coordination Centre (MNMCC) to organize and coordinate foreign military assistance deployed by assisting states as well as civilian responders until the OSOCC was operational. Representatives from the UN's Humanitarian Civil-Military Coordination (UN-CMCoord) established a civil-military coordination cell, the Humanitarian-Military Operations Coordination Center (HuMOCC), to liaise between the two.

Nepal's Transition Towards Federalism

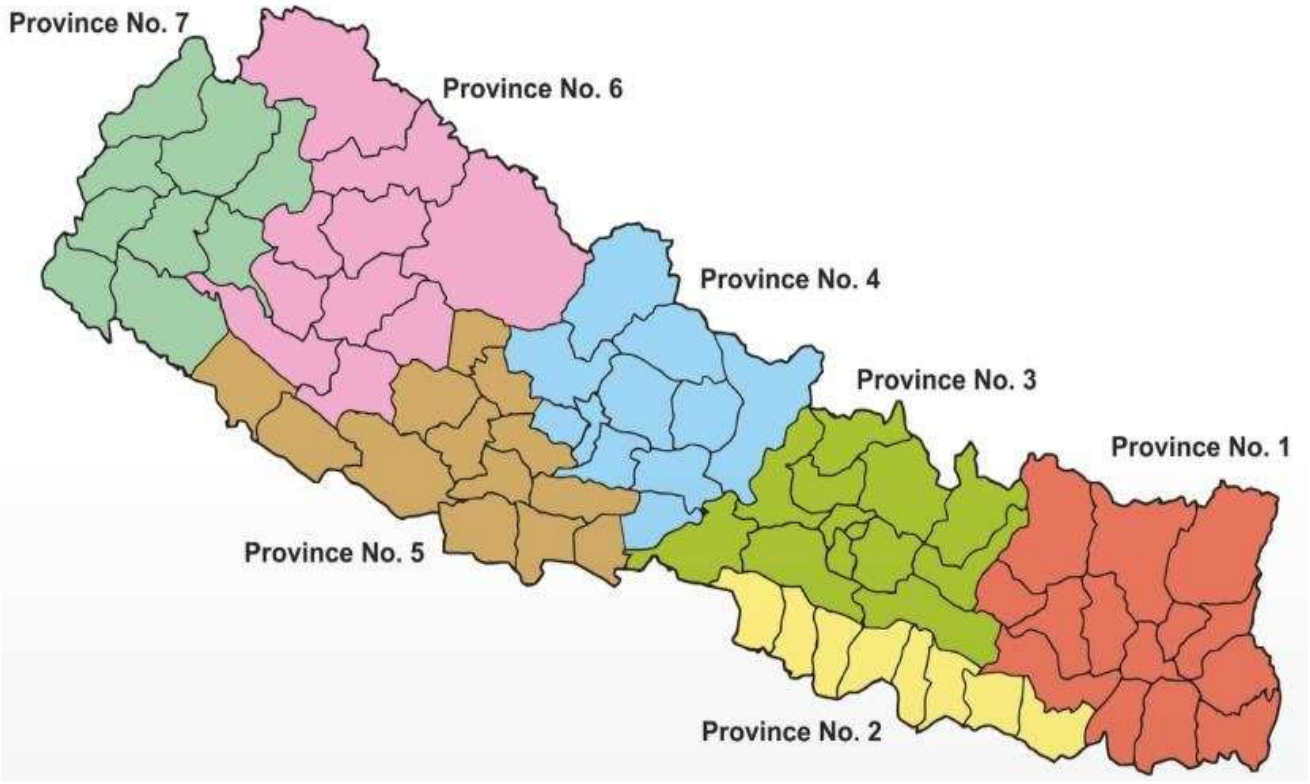
The Constitution of Nepal, adopted on September 20, 2015, set the grounds for Nepal's political transition to a Federal Democratic Republican State. In the sixty-eight years of transition from a monarchy to a federal republic, Nepal experienced political turbulence and fragmentation with eight different constitutions and twenty prime ministers (*Nepal: Systematic Country Diagnostic* 1). Nepal was ranked by the Worldwide Governance Indicator to be in the bottom 20th percentile for political stability and absence of violence/terrorism and in the 23rd percentile for rule of law (*Nepal: Systematic Country Diagnostic* 5).

The central tension in Nepal is historically between ruling groups and those who feel excluded and marginalized, a result of Nepal's history of hereditary, feudal regimes and a party-less system where political participation was limited to two high-caste groups. The 2015 Constitution is the final outcome of a ten-year process of drafting a new constitution and citizen advocacy for more socially inclusive governance (*Nepal: Systematic Country Diagnostic* 1).

The Constitution divides Nepal into three levels—federal, provincial, and local.[4] This political structure aims to shift the locus of power from the previous Kathmandu-centric government to the seven new provinces and 753 new municipal and rural governments (*Nepal: Systematic Country Diagnostic* 1). The provincial division of Nepal is shown below in Figure 1.

The provinces were developed by grouping together and splitting existing districts, and were subject to political gerrymandering. As seen in the table below, each province differs in demographics, population, economics, and geography, characteristics that will affect each province's future trajectories.

Figure 1



Source: Jung Mahat, Tek. *Analysis of Food Security in Nepal: The Case of Karnali Province*. May 2018, www.researchgate.net/figure/Provincial-Map-of-Nepal-left-and-Map-of-the-Karnali-Province-right_fig1_330409347.

[4] Throughout this report, "federal" is used to describe government organizations at the highest tier within Nepal, followed by the seven provinces (also referred to as states in some reports), then districts, as described in Schedules 8 and 9 of the 2015 Nepal Constitution. "Local" was chosen as a catch-all term for levels below district, including urban and rural municipalities, metro and sub-metro cities. "National" is used to refer to any comprehensive government action.

Table 2: Demographics of Nepal's Provinces

Provinces	Major cities	Area %	Population %（2011 Census）	Number of Local Levels	Multidimensional Poverty Rate[4]
Province 1	Biratnagar, Dharan	17.60	17.10	137	19.7
Province 2	Birgunj, Janakpur	6.56	20.40	136	47.9
Province 3	Kathmandu, Lalitpur, Bharatpur	13.79	20.90	119	12.2
Province 4	Pokhara, Vyas	14.13	9.10	85	14.2
Province 5	Butwal	14.93	17.00	109	29.9
Province 6	Birendranagar	19.70	5.90	79	51.2
Province 7	Bheemdatta (Mahendranagar), Dhangadhi, Godawari	13.28	9.60	88	33.6

Sources: "Nepal: Federal Democratic Republic of Nepal." Provinces, Major Cities & Urban Municipalities - Population Statistics, Maps, Charts, Weather and Web Information, 8 Dec. 2017, www.citypopulation.de/Nepal-Cities.html.
Gyawali, Gokarna P. Federalism: Challenges and Opportunities in Nepal. Molung Educational Frontier, Dec. 2018, www.nepjol.info/index.php/mef/article/view/22439/19095.
Economic Survey 2017/18. Government of Nepal, Ministry of Finance, vya.

[5] The Multidimensional Poverty Rate measures how people experience poverty through health, education, and standard of living. Indicators include child mortality, school attendance, sanitation, drinking water, and housing. Those who experience deprivation in at least one third of these weighted indicators are considered multidimensionally poor.

Benefits of the Transition for Nepal's Disaster Management and Preparedness

The move towards federalism could foster a more inclusive and accountable form of government in Nepal, where there is high ethnic and linguistic diversity. The country is slowly institutionalizing democratic practices at all levels of government. For instance, the local elections held in 2017 were the first of their kind in over twenty years, and 60% of those elected were new to politics (*Nepal: Systematic Country Diagnostic* 8). This offers Nepal an opportunity for change. Giving authority to local and provincial levels can allow local communities to prioritize and address their most pressing, disaster-related issues, such as annual flooding, earthquakes, or mudslides. Additionally, more autonomous local governments could better bridge the geographic and social inequities that persist in access to basic services.

Concerns Regarding Transition for Nepal's Disaster Management and Preparedness

There is still significant uncertainty about how the transition will unfold. In particular, questions remain regarding the allocation of financial resources to provincial and local governments, which are currently not self-sufficient enough to adequately raise their own funds. However, the government budget for the 2018 fiscal year allocated only 19.2% of federal funds to local governments, less than 50% of the amount requested by newly elected local council members (*Nepal: Systematic Country Diagnostic* 9). As a result, even if subnational levels develop disaster preparedness plans, they may lack the necessary funding for proper implementation. Additionally, with the majority of local elected officials being new to politics, there may be a lack of implementation capacity. Local governments may not have the capacity to deliver the services required by their new responsibilities. This may be the case for governments in poorer, more remote areas where service provision is much more complex.

Flagships Developed by the Nepal Risk Reduction Consortium

Launched in 2011, the Nepal Risk Reduction Consortium (NRRC) is a group of domestic and international humanitarian, development, and financial organizations partnered with the GoN to reduce Nepal's vulnerability to natural disasters. The NRRC identified five flagship priorities for sustainable disaster risk management based on the Hyogo Framework for Action and Nepal's National Strategy for Disaster Risk Management.

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Flagship 1: School and Hospital Safety

Flagship 1 ensures that hospitals and schools in Kathmandu Valley will survive a major earthquake and have the capacity to operate after a disaster. The objectives are to conduct vulnerability assessments, retrofit and strengthen the buildings, train health practitioners and engineers in earthquake resilience, develop national training materials for hospital safety, and build community awareness of school safety and disaster risk management.

Flagship 2: Emergency Preparedness and Response Capacity

Flagship 2 builds the GoN's preparedness and response capabilities at the federal, provincial, and local level. The objectives are to build institutional capacity of first responders, strengthen disaster preparedness and information management, establish and strengthen warehouse, infrastructure, logistics and stockpiling support, and strengthen preparedness for the facilitation of international assistance after a natural disaster.

Flagship 3: Flood Risk Management in the Kosi River Basin

Flagship 3 focuses on strengthening institutional capacities and improving flood management and mitigation in the short-term, and protecting Nepal from flood-related disasters and sustaining development in the long-term. To do so, the Ministry of Irrigation and the World Bank will conduct a flood risk assessment, implement methods for flood mitigation, and develop forecasting and early warning systems.

Flagship 4: Integrated Community-Based Disaster Risk Reduction/Management

Flagship 4 is a coordination and advocacy mechanism for community-based disaster risk reduction (CBDRR), with the goal of building a common understanding and approach among the many stakeholders, track progress against national targets, and encourage greater investment across Nepal for increasing CBDRR.

Flagship 5: Policy and Institutional Support for Disaster Risk Management

Flagship 5 focuses on reducing vulnerability and sustaining development in Nepal by institutionalizing plans, policies, and programs at all levels of government. This includes strengthening building codes and land use planning, and building technical and functional capacity at national institutions for disaster risk management.

Literature Review

Security forces become familiar with humanitarian systems, keep information unclassified, and standardize information requirements to ensure synchronized collection and sharing to increase information sharing capabilities

As outlined in the Background, the Flagships define five key areas of consideration for risk reduction and disaster management. This research focused specifically on **Flagship 2, Emergency Response and Preparedness Capacity;** and **Flagship 4, Integrated Community-Based Disaster Risk Reduction/Management.** In particular, this literature review presents findings and relevant recommendations gathered from After Action Reports (AARs) from the 2015 Nepal Earthquake from organizations such as the U.S. Department of Defense (DoD) Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM), the GoN, and the United Nations Children's Fund (UNICEF). Although neither Flagship explicitly mentions civilian-security force communication and coordination, many of the team's findings in this area neatly align with the overarching goals and challenges of Flagships 2 and 4.

Flagship 2: Emergency Response and Preparedness Capacity

Immediately following the 2015 Nepal earthquake, the GoN issued a request for international assistance. This was met with the response of seventy-six urban SAR teams, 141 foreign medical teams, foreign military air assets from three countries, and various humanitarian and development agencies, UN and otherwise (Cook et al. 536). While the response was seen as sufficient, communication and coordination between stakeholders could be improved to prevent duplication of effort, leading to a faster response and wider distribution of aid, both geographically and in population diversity. The issue has received a large amount of attention in most AAR literature.

Flagship 2 addresses the physical, technological, and communications infrastructure developed to prepare for disasters. It is divided into two subsections—Civilian-Security Force Communication, and Bilateral and Multilateral Agreements.

Civilian-Security Force Communication

Multiple AARs identified several communication and information sharing challenges between organizations, most commonly between security forces and civilian organizations. In a *Liaison* journal article prepared by CFE-DM that reviewed AARs on major natural disasters, the organization recommends that security forces become familiar with humanitarian systems, keep information unclassified, and standardize information requirements to ensure synchronized collection and sharing to increase information sharing capabilities (Aoki 15).

Differences in cultures, institutional priorities, and operating methods also created communication challenges. However, the establishment of the NEOC by MoHA and its facilitation by UN OCHA helped address some of these obstacles. The HuMOCC was similarly effective in coordinating civilian and military actors at the national level, but the Case Study conducted by CFE-DM recognized a lack of capability for similar coordination at sub-national levels ("CFE-DM Case Study Series").

Bilateral and Multilateral Agreements

Many AARs from the 2015 Nepal Earthquake specify the disaster-prone nature of the country, critiquing the lack of previously established relationships and SOPs (Wendelbo et al. and "Nepal Lessons Learned"). As a result of the lack of pre-existing agreements, countries responded on an ad-hoc, bilateral basis, which "challenged Nepal Government [sic] coordination and reduced efficiency, particularly during the immediate response to the initial earthquake" ("CFE-DM Case Study Series" 14).

Some existing legal frameworks, such as the Regional Framework established by the South Asian Association for Regional Cooperation (SAARC), were instrumental in the coordination of relief aid supplies and personnel. In 2011, the SAARC established the National Disaster Rapid Response Mechanism (NDRRM) to assist member states in the event of natural disasters (Wendelbo et al. 32). Furthermore, the Cluster System[6] provided some clear delineation about roles and responsibilities during the immediate disaster response. For example, the UN Logistics Cluster operated a humanitarian staging area at the Tribhuvan International Airport, which was integral in efficiently evaluating and distributing supplies (Cook et al. 536).

Establishing and strengthening these partnerships before a disaster allows states and organizations to preemptively strategize resource allocation, aid delivery, and ground support.

Nonetheless, the challenges posed by the lack of clearly delineated bilateral and multilateral agreements were significant. Establishing and strengthening these partnerships before a disaster allows states and organizations to preemptively strategize resource allocation, aid delivery, and ground support (Wendelbo et al.). In particular, the UN Logistics Cluster recommends establishing a Strategic Advisory Group to "institutionalize relationships, develop guidance, procedures, and methods" for a faster response that more accurately addresses the needs of the target population (Global Logistics Cluster 4).

The Nepali Army identified another recommendation to address coordination challenges: the establishment of a SOP for the MNMCC to establish expectations of participating military partners. Most critically, this SOP must involve language coordination to avoid the challenges caused by language barriers in the 2015 response. For instance, international actors arrived without previously coordinating their own ground support, including translators (Cook et al. 544), and sometimes provided medical supplies that were not labeled in Nepali or English (Cook et al. 543). Furthermore, international responders outside the Cluster System lacked a common language, experienced differences in contextual analysis, culture, and were unfamiliar with mandates (Cook et al. 542).

[6] The Cluster Approach is the international humanitarian community's system for coordinating responses to large-scale disasters in support of the affected state. Implemented in 2005, each cluster is comprised of the organizations working in nine technical sectors, or clusters, of response, such as logistics, health, nutrition, and shelter. Clusters are led by UN agencies or international NGOs and have particular roles and responsibilities in disaster response. For further reading, see "What is the Cluster Approach?" Humanitarian Response, UN OCHA, https://www.humanitarianresponse.info/en/about-clusters/what-is-the-cluster-approach.

Flagship 4: Integrated Community-Based Disaster Risk Reduction/Management

In addition to the overarching themes of civilian-security force communication and international agreements in Flagship 2, it is crucial to bear in mind that these national and international policies and procedures affect individuals at the local level. Therefore, much of the AAR literature discussed the importance of considering local needs.

Flagship 4 focuses on response and resilience at the local level, as well as the integration of communities into national disaster mitigation strategies. Here, it is divided into two sections—Municipal Integration and Special Considerations for Vulnerable Populations.

Municipal Integration

While there were substantial aid provisions provided to Nepal, allocated resources often failed to meet the local populations' needs. For example, due to inaccurate population data, needs assessments did not fully estimate the situations of individual communities (Aksha et al. 103). While the government instituted a National Building Code to prevent widespread destruction in the case of natural disaster (Bracken et al. 128), several localities outside of Kathmandu were not compliant with these codes because of poor education and enforcement (Bracken et al. 129).

Additionally, logistical obstacles to coordination with local levels revolved primarily around the geography and communications infrastructure. Many areas within Nepal were only accessible by air because of the country's difficult geography and the destruction caused to infrastructure by the earthquake (Global Logistics Cluster). Exacerbated by the lack of cell towers in some areas and damage to cell networks in others, many disaster responders struggled to rapidly assist rural communities. In some instances, responders were forced to take multiple trips by air or pack animal to distribute appropriate aid to some remote populations (Global Logistics Cluster).

Beyond the technical complications with communications, the roles of individual actors were often unclear. Particularly at the local levels, community leaders and NGO responders were uncertain about the level of authority they had for decision-making, delaying responses on the ground (Bracken et al. 102). Questions about authority and the chain of command became even more difficult to solve without allocated spaces for members of humanitarian organizations, government personnel, and international relief workers to meet to discuss progress and responsibilities during the response (Cook et al. 544).

Despite concerns about the division of authority, the 2015 response illustrated that there were responders in local communities with experience in disaster relief. These community leaders, who improvised relief teams, can provide significant resources and knowledge from a local level for future disaster management ("Lessons from Nepal and Other Recent Disasters" 42). Despite plans enacted by the federal government, gaps remain in trainings of emergency processes, SAR details, and building code laws. Local-level feedback was often not included in higher-level decision making, leading to misallocated resources in aid distribution (Shrestha and Pathranarakul 536). Cook et al. similarly identified decisions being made at the international level that did not incorporate feedback from local and provincial actors, resulting in the underrepresentation of community-based organizations in municipal and national structures.

Based on these challenges, recommendations presented in the literature prioritized carrying out comprehensive needs assessments for local-level communities, identifying potential complications due to terrain, including local contacts in federal and international level discussions, and communicating, developing, and practicing at the sub-provincial—i.e. district and municipal-level—plans (Bracken et al. 102).

Considerations for Vulnerable Populations

For the success of future disaster management plans and operations, policymakers and responders must consider the needs of vulnerable populations who may face disproportionate hardship in a disaster. With over 126 caste and ethnic groups, 123 spoken languages, and varied geographical conditions, Nepal's cultural dynamics are complex (DARA 12). Understanding how cleavages such as geography, gender, ethnicity, religion, class, and caste intersect in Nepali society is crucial to assessing current barriers to resources, information sharing and visibility in disaster response.

Throughout the 2015 response, the failure to cater programming to the nuanced needs of disadvantaged groups further limited their access to assistance and lifesaving resources. Amnesty International reported instances of discrimination, such as unequal access to relief for Dalits and Janajati peoples, aid distribution on the basis of political patronage, and standardized cash and food distributions despite different levels of food scarcity (Amnesty International 10-11). Although women, children, and vulnerable groups were considered as priority groups in the Cluster System response, UNICEF concluded that "there was only a slight difference in the suitability of the support provided to women/girls and men/boys" (DARA 27).

These examples illustrate that while responders understand the importance of equity and sensitivity for specific populations' needs, there was often a failure to effectively implement these policies in reality. Engagement with vulnerable communities who could articulate these specific needs, while improving, remains inconsistent (DARA 28). The GoN pledged to create a grievance redress mechanism, but the status of this body is unclear ("Government of Nepal Post-Disaster Needs Assessment" 91). Therefore, future successful disaster management requires policymakers to build better relationships with informal leaders, design inclusive programming, and execute these projects with the needs of vulnerable populations in mind.

Future successful disaster management requires policymakers to build better relationships with informal leaders, design inclusive programming, and execute these projects with the needs of vulnerable populations in mind.

Research Question

The purpose of this research is to identify areas of strength, areas of improvement, and possible next steps to empower Nepal's government agencies and security forces, as well as the international community, to more effectively prepare for and respond to future disaster scenarios, ultimately supporting a more resilient Nepal.

This research analyzed the disaster management capacity of Nepal by asking the following:

What are the areas of strength and areas of improvement that – if maximized – could significantly improve Nepal's abilities in two major areas: design and implementation of effective disaster management (at all levels of government) and development of improved interagency and multinational disaster management communication and coordination?

To answer this question, the team conducted qualitative research with various GoN agencies and security forces, structuring their research approach through the lenses of Flagship 2 and Flagship 4, as discussed in the sections above.

Methodology

Steps

1. **Conducted Literature Review**
2. **Developed Questionnaire**
3. **Interviewed in Kathmandu**
4. **Created Analysis Plan**
5. **Third-Party Review of Methodology**
6. **Informed Findings and Recommendations**

To develop the research question, the team conducted an extensive literature review to identify the main challenges and lessons learned from the 2015 Nepal Earthquake response. As discussed in the Literature Review, Flagship 2 and Flagship 4 were selected as the focus for the project based on their recurrence in AARs and their connectedness with the research question.

From the two Flagships, the team identified a series of questions for further inquiry to investigate in Nepal. To evaluate what information was most necessary and insightful to collect, the team developed a qualitative research tool with quantitative elements for interviews and focus groups. The team drafted a questionnaire with open-ended questions and Likert scales measuring the respondents' confidence levels in various stakeholders related to disaster management. Using the questionnaire, the team carried out interviews in Kathmandu with high-level security force, government, and civilian officials. The interviews were conducted with one team member holding a dialogue with the respondent while another member acted as a scribe.

With the responses from the interviews, team members developed an analysis plan that identified and coded keywords from the responses. These codes were based on a series of thematic elements, including preparedness, resiliency, risk reduction, communication structures, and disaster response capacity. In the coding process, the team also considered qualifiers that indicated whether a particular element or stakeholder was considered positively or negatively, or if the interviewee indicated specific areas for improvement. A third-party reviewer then assessed the coding methodology to ensure analysis and design soundness. After the quality assurance check, the coded interviews informed the team's findings, recommendations, and conclusions.

Findings and Recommendations

Domestic Security Forces' Response

It was clear throughout the interviews that in the event of a disaster, MoHA is the focal point for control for all Nepali security forces: the Nepal Police, the Armed Police Force (APF), and the Nepali Army. When disaster strikes, the Nepali security forces and local citizens are the first to respond, and with few exceptions, the only ones to respond in the first seventy-two hours of a disaster.

Nepal Police

Since the Nepal Police is the most dispersed security force throughout Nepali communities, it has the most constant contact with civilians and is typically the first to respond to a disaster. Consequently, the Nepal Police have awareness of events "on the ground" that can inform the responses of other actors. However, the benefits of close proximity are constrained by the force's limited training and lack of equipment to properly respond to complex disasters.

Therefore, as the first responders, the Nepal Police require universal training in first responder practices, triage capabilities, and reporting procedures to save lives immediately. These trainings may include lifesaving first aid procedures such as applying tourniquets and stopping hemorrhaging.

The Nepal Police must also address their equipment shortages, as it is unlikely that they will receive assistance from the federal government or international donors. One possible solution would be for local governments to provide equipment to be stored in police stations. This would allow the equipment to be readily available and tailored to that specific community's risk. This solution would also require the equipment to remain at the station ready for use, not with the individual police officer.

Key Recommendation #1:
Increase training for Nepal Police as first responders and upgrade available equipment to act decisively in the immediate aftermath of a disaster

Armed Police Force

The APF is a paramilitary organization dispersed throughout Nepal that was created in response to the insurgency from the mid-1990s until 2006. The APF filled the gaps of the Nepal Police, which did not have the capability to fight against insurgent forces, and the Nepali Army, which struggles to disperse itself throughout Nepal.

In the post-insurgency era and despite the passing of the Armed Police Force Act of 2001, which intended to define the APF's functions with regard to disaster response (CFE-DM "Disaster Management Handbook 42), the role of the APF within Nepal's security sector remains unclear. Because they are not the primary law enforcement agency, the APF must turn over apprehended individuals to the Nepal Police for arrest, essentially conducting a "citizen's arrest". Conversely, the APF receives insufficient international support, particularly from the U.S., because they are not a full-fledged military force with military mandates. As a result, the APF struggles to obtain the funding and robust training that is traditionally only offered to the Nepali Army. Furthermore, several respondents shared sentiments that concurred with the findings of a previous Asia Foundation study, in that "the NA and APF have overlapping mandates, especially with respect to disaster response" (Manandhar et al. 7).

Despite these challenges, by dismantling the APF, Nepal would lose a technically capable organization with highly trained members. The relationships that APF members and units have within the communities in which they operate would also be lost, and would result in increased unemployment.

Consequently, the APF must collaborate with the GoN and MoHA to clarify their position in the disaster preparedness and response sphere moving forward. The GoN and MoHA should perhaps look to turn the APF into a highly skilled crisis responder. The APF has assumed some responsibility for disaster response, and have been verbally mandated by higher authorities to do so. These new mandates would also allow the APF to receive more training and aid from new outside organizations that are currently restricted from partnering with them.

Key Recommendation #2:

Provide clarification of the Armed Police Forces roles and responsibilities within its existing disaster response mandate

Nepali Army

When there is a large-scale disaster in Nepal, respondents stated that the Nepali Army is the primary security force entrusted with disaster response. This high degree of trust will likely continue for future disasters. The Nepali Army is also the most highly trained security force as a disaster responder and they are dispersed throughout the country. One respondent stated that two Nepali Army units are specifically designated and trained for disaster response.

Furthermore, the Nepali Army is embracing a proactive approach to disaster response by establishing coordination centers at local levels and prepositioning stocks of equipment and goods in the event of a disaster. There have also been some community outreach and training in schools and communities to teach basic first aid and response procedures.

Nonetheless, the majority of respondents felt the Nepali Army is the most removed from the ground-level. While viewed as a highly trustworthy organization, the Nepali Army is considered to be more closed-off to civilian interactions. Respondents state that this is because many Army personnel live in barracks rather than among the people. Moreover, since its guidance comes directly from MoHA and the MNMCC, there can be delays in response time compared to the Nepal Police, who are already dispersed among local communities.

Despite being the best trained and equipped of the three security forces, the Nepali Army remains insufficiently prepared in many areas. One respondent remarked that approximately 5,000 Army personnel are sufficiently trained in disaster response, however, about 20,000 are awaiting training. The Nepali Army continues to lack significant training and tools to properly respond to challenging disasters, including but not limited to SAR equipment and training on its usage. Additionally, the Nepali Army needs a stronger communications contingency plan and platforms, in case commercial telecommunications networks do not operate.

Key Recommendation #3:

Continue training and equipping Nepali Army personnel for the most difficult tasks associated with disaster response

The Nepali Army could increase local-level training with community members. Not only do these initiatives allow information to reach civilians, but they also build relationships between the community and the Nepali Army, one that may not have existed prior to a disaster. The training program should mirror those established in SAARC states to establish mutual understanding and coordination in disaster response.

Key Recommendation #4:
Encourage platoon representatives in the Nepali Army to maintain contact with and develop relationships with local government leadership and community

Additionally, more Mobile Training Teams (MTTs) must be created to conduct trainings in more remote areas. While mobile training is already done to some extent, current implementation, where platoons or companies are sent to Kathmandu, is financially unsustainable. Alternatively, sending MTTs to more distant Nepali Army companies for longer spans of time is less burdensome. The MTTs could also cater to the most at-risk regions and tailor their training to specific risks, such as urban SAR, fire response in the Terai, or high-altitude rescue in mountainous regions.

Key Recommendation #5:
Create and disperse area-specific MTTs in the Nepali Army to conduct trainings across Nepal

Civilian-Security Force and Cross-Security Force[7] Communication and Cooperation

Respondents identified local-level meetings that include numerous stakeholders as successful, especially when there are representatives from all national security forces. These meetings help facilitate civilian-security force communication and create critical relationships prior to a disaster, according to respondents. Security force representatives should sustain and implement a presence at any relevant provincial government disaster management meetings and activities. Their presence would help to better incorporate the provincial governments into the disaster management communication chain.

Key Recommendation #6:
Sustain inclusive district and local level meetings, and expand this practice to the provincial level

[7] The team has chosen to describe communication and cooperation between the various security forces as "Cross-Security Force", in lieu of the terms "military-military" or "mil-mil". These security forces include but are not limited to Nepal Police, APF, Nepali Army, and foreign militaries.

The three security forces of Nepal continue to use siloed approaches to disaster response and training. While each organization has increasingly devoted attention and resources to improving their capabilities, they insufficiently coordinate with each other or outside organizations. A naturally tiered structure for response and command within the security sector already exists, but it is not used effectively. With the new National Disaster Response Framework (NDRF), an Incident Command Structure system can increase coordination between the Nepal Police, the APF, and the Nepali Army. This would allow the Nepal Police to share local information with the other two forces, who could then inform the MNMCC and the NEOC. This permits MoHA to better coordinate the entire national response and inform the international community about how they are most needed.

Key Recommendation #7:
Establish systems within the Nepal Police, APF, and Nepali Army for integration with each other and with local, provincial, and federal governments

Notable exceptions to this trend are U.S.-led Disaster Response Exercises and Exchanges (DREEs) and UN-led Cluster Exercises, in which members of all three security forces are invited to participate. There have also been instances where highly trained members of the Nepali Army have trained the APF. As these exercises progress, they must better integrate provincial and local levels, as well as integrate more realistic exercises that require all parties to implement their existing systems and accurately respond to a disaster for training purposes.

Key Recommendation #8:
Continue and enhance DREEs conducted by security forces to include more participants and realistic exercises

Communication channels between humanitarian clusters and the Nepal Army are considered difficult to establish and institutionalize, with some respondents stating they were uncomfortable dealing directly with the military. To overcome challenges in building relationships, the Nepali Army could continue holding DREEs, including as many stakeholders as possible to institutionalize relationships and organizations.

Key Recommendation #9:
Institutionalize relationships between the Nepali Army and various GoN and UN agencies, and NGOs to facilitate pre-disaster federal and international-level communication for disaster preparedness

There must also be greater focus on risk mitigation for responders. Interview respondents mentioned that while motivation was high, due to a lack of training and critical equipment, responders often put themselves at risk. This not only lowers the number of responders but also forces other personnel to protect or save their peers rather than other civilians.

Key Recommendation #10:
Develop risk management and mitigation training for security forces to mitigate personnel danger

International Response

Throughout the team's interviews, the international disaster response, including foreign militaries, was viewed favorably; however, there was hesitation by many respondents to proclaim that the international response was as productive as it could have been. International responders and foreign militaries provided equipment and expertise that are otherwise unavailable in Nepal. Examples of this include unique capabilities in the realms of logistics support, engineering, aid, and SAR teams. Such was the case in Nepal where the disaster exceeded the capacity of the affected state, thus foreign military assets were called to assist.

Countries such as the United States and international organizations such as the UN were considered highly successful due to their extensive prior preparation in Nepal. However, the trainings, exercises, and agreements necessary to achieve this degree of preparation are costly and thus created a barrier to entry for smaller governments and organizations.

The lack of understanding and existing rules of participation led to isolated, yet recurring problems that the respondents noted. Many of these problems surfaced because some international responders arrived unprepared or unwilling to integrate into the systems in place. Several respondents referred to some international responders as "disaster tourists" with no experience, looking to have a visible presence instead of truly assisting the response effort. Furthermore, some non-military international responders came without proper documentation and attempted to bypass immigration and customs procedures for entering Nepal. This issue later resurfaced when they were trying to leave Nepal. These responses coincide with prior research findings. As Joint Task Force 505 Commander, Brig. Gen. Paul J. Kennedy stated, "In one spectacular failure, an entire country's contingent was sent home because of an unwillingness to compromise - not a diplomatic win" (LIAISON Staff 28). A bilateral agreement system to identify possible responders and ensure proper documentation should be implemented prior to a disaster. During this process, responders can also highlight their capabilities so that MoHA can most effectively monitor and coordinate the international response.

Key Recommendation #11:
Evaluate potential responders and create bilateral agreements before an incident to ensure a Nepali-led response

Furthermore, some respondents lacked the necessary understanding of Nepali culture, procedures, and even terrain. This inadequate awareness again illustrates that in many instances, perceived or otherwise, international responders were not prepared. Training can be done to ensure that all the responders better understand the Nepali context and structures.

Key Recommendation #12:
Implement and improve training for international responders on the Nepali context and structures before a disaster strikes

There were several noted exceptions to the aforementioned trends, mostly that disaster responders from other SAARC nations who had trained regionally shared mutual regional response standards. Several respondents noted that most of the personnel from India and all of the personnel from Bangladesh were trained on the same system, thus they had a contextual understanding and could seamlessly integrate into the response.

Key Recommendation #13:
Create an identifier for regional responders who have attended SAARC training and prioritize their entry into country

Technology and Communication

Although there were communications issues after the 2015 Nepal Earthquake, commercial networks, namely Nepal Telecom (NTC) and Ncell, were operating efficiently several hours later. This may not be the case for future disasters, therefore MoHA and the security forces must develop contingency plans should the next disaster wipe out the commercial infrastructure. There are existing efforts to establish HAM radio operators and to acquire satellite phones across the country; however their reach is not yet large enough to be relied upon in a major response effort. According to one respondent, about 200 people are currently trained on HAM radios, a major improvement from twenty-one individuals in 2011. However, most of these operators are based in the Kathmandu Valley. There are a limited number of satellite phones available throughout the security forces, and only the Nepali Army have HF/VHF/UHF radio capability.

One possible way to integrate a contingency plan is to train and implement the use of basic HAM radios at the Nepal Police and APF levels, allowing for faster dissemination of information. If implemented and equipped, this system must be integrated into trainings and exercises to ensure that all personnel can use the equipment.

Some local NGOs have partnered with NTC and Ncell to send out early warning messages to users, but respondents noted that these projects are currently limited to floods. Further research showed that landslides have also been added to the early warning message system ("Ncell"). MoHA could also send out emergency warning messages for all types of natural disasters. This system could provide critical information beyond potential threats, such as (un)available infrastructure, points of goods and services distribution, and health threats.

Key Recommendation #14:

Improve communication capabilities and pre-existing systems between the GoN and security forces to build a communications contingency plan and early warning system

Other technologies that could assist the security forces' disaster response include drones and satellite imagery capabilities. While there is no doubt this technology is cutting edge, procurement and implementation require a significant amount of funding and training. However, one respondent noted that certain satellite imaging systems for earthquake monitoring and damage assessment are already used in nearby countries, such as Pakistan. Further research shows that Nepal is currently using satellite data for forest fire detection. This initiative utilizes Moderate Resolution Imaging Spectroradiometer data from two U.S. National Aeronautics and Space Administration (NASA) satellites (Maden). Therefore, the establishment of bilateral agreements can encourage intergovernmental technology sharing during a disaster. Once bilateral agreements are created, training should be sought out to ensure responders know how to use equipment before the disaster.

Key Recommendation #15:

Pursue bilateral agreements for sharing of satellites and other technology for disaster preparation and response, as well as procuring corresponding training

Transition to Federalism

Decentralization of Authority in Disaster Preparedness and Response

The transition to a federal system of governance through the 2015 Constitution of Nepal presents an opportunity to engage citizens at a subnational level within disaster management. Specifically, under the 2015 Constitution of Nepal, local governments have a constitutionally mandated responsibility to conduct disaster planning and preparedness. However, respondents reflected that local governments lack the necessary resources to effectively implement this disaster management mandate, mainly an independent budget and support staff.

Throughout the team's interviews, it was apparent that this transition has not yet closed the gap between disaster management policies and actual implementation of the budget at the local level. Respondents stated that while local governments were instructed to include disaster management costs into their annual budgeting procedures, this was largely not feasible as the budgets remained insufficient to account for these expenses. Furthermore, some respondents cited many challenges to generate income to supplement disaster management costs within existing budgets. These findings were confirmed upon the team's return through previously published reports (Shrestha and Pathranarakul 16). Decentralization of a disaster management budget to allow local governments to resource equipment and training for staff that best addresses disaster management threats will create a locally-nuanced solution to address specific needs.

Key Recommendation #16:
Decentralize more of the federal disaster management budget down to the local level

The understanding of local governments' roles and responsibilities within disaster management under the 2015 Constitution of Nepal is mixed among stakeholders. While some respondents stated that this knowledge was clearly defined and well understood, others expressed a lack of understanding and a desire for further education around the effect of the Constitution on local-level disaster management practices.

Additionally, some respondents cited a lack of training for provincial governments in comparison to district governments, who have received various trainings concerning disaster management and the new Constitution through the Nepali Army and MoHA. This observation aligns with respondents who stated that provinces are often excluded from the disaster management chain of communication. Currently, many local governments directly connect with districts, and districts bypassing provinces to connect with MoHA. To address mixed knowledge among stakeholders, training should be conducted from federal to provincial entities, then provincial through district governments to local governments. This builds relationships between levels of government and ensures all actors have feasible and realistic expectations during disaster response.

Key Recommendation #17:
Clearly delineate responsibilities between tiers of government, and standardize responsibilities across provincial, district, and local governments when conducting disaster management trainings

The current NDRF does not address the new changes to the governmental structure and therefore hinders common understanding of responder roles. Without approaching this transition through the NDRF, it is likely misinterpretations between stakeholders will continue.

Key Recommendation #18:
Restructure the NDRF to better align with the seven-provinces model

Under the 2015 Constitution, local and provincial levels are expected to independently manage small-scale disasters while the federal government will enhance their capacity and provide assistance during mega-disasters. Furthermore, in the Government of Nepal's *Disaster Risk Reduction (DRR) National Strategic Plan of Action*, the need to orient elected officials to legal and regulatory arrangements of the Disaster Risk Reduction and Management Act is clearly stated. Although most respondents cited this political transition as an opportunity for local governments to exercise greater control in this realm, others were skeptical of the federal government's ability to decentralize the required authority and resources during an actual emergency. This skepticism of decentralization can be countered through developing systems at the federal level to educate and assure leaders of their knowledge of and supervisory control over localities. The team recommends working with key federal-level stakeholders to develop appropriate monitoring and auditing measures to institutionalize federal supervisory control over local processes and plans. Additionally, all levels of government should orchestrate workshops to facilitate a shared understanding of requirements.

Key Recommendation #19:

Develop federal systems to educate local leaders of their responsibilities and supervisory control of small-scale disaster management in accordance with the GoN's DRR National Strategic Plan of Action

Civil Governance

Newly established local elections are seen as a potential accountability measure to ensure that leaders are properly planning and preparing for disasters. Respondents noted that the incentive of (re)election for local politicians will strengthen disaster management practices at the local level and ultimately work to better protect civilians. Additionally, local politicians have a greater incentive to advocate for the feedback of their constituents to be incorporated into national disaster management legislation and planning. These events encourage collaboration and communication between parties, and could accurately represent the needs of the represented population. Thus, it is vital that disaster management-related information is adequately disseminated to the general public. Not only does this empower voters to participate and make informed decisions in disaster management discussions, but it also encourages candidates to prioritize disaster management and preparedness on their political agenda.

Key Recommendation #20:

Enable information dissemination to the general public on civil disaster management capacity to inform voting

The personality and past experiences of local-level leaders, such as mayors, were cited as important factors in determining local quality of planning and preparedness activities as well as their level of engagement with disaster management. Identifying local leaders with highly successful disaster management practices could render greater understandings of this observation. To ensure the public retains disaster management experience as a priority value in elections, provincial governments should conduct regular audits on local governments' disaster preparedness plans to emphasize importance and increase accountability. The results of these audits or drills should be published so the public is kept aware, and may adjust voting practices based off results.

Key Recommendation #21:
Conduct and publish regular audits on local governments' disaster preparedness plans

Disaster response methodologies and accompanying trainings are consistently updating as best practices evolve. To capitalize on the most current emergency management preparation and response strategies, the creation of formalized information sharing structures would allow stakeholders to engage and collaborate with one another. Respondents found that although information sharing is practiced within urban areas, it can be improved upon and expanded to better integrate rural areas. Having widely accessible platforms for information dissemination may improve communication and coordination between emergency management actors.

Key Recommendation #22:
Expand information sharing mechanisms to improve access to best emergency management practices, particularly in rural areas

Constraints and Limitations

In the production of this report, the team faced numerous constraints and limitations that required adaptation. First and foremost, while conducting desk research on existing literature regarding the 2015 Nepal Earthquake, the team was initially limited by the availability of unclassified and publicly available AARs. Similarly, full comprehension of relevant information necessitated a familiarization with the specific language and vocabulary used by organizations such as the DoD, CFE-DM, the GoN, and humanitarian actors operating within disaster preparedness and management. Nonetheless, with regards to the two Flagships chosen for the research concentration, there existed sufficient availability of information for the questionnaire to develop productively and successfully prior to travel and interviews.

Throughout the duration of the fieldwork, a project constraint that initially arose was the unknown length of time for respondents to answer questions. It was quickly realized that because of the respondents' limited time allotment for the interviews, there was an additional constraint in the interviewer's ability to ask follow-up or clarifying questions. Moreover, the project was further restricted by the limitations of time due to the inability of the consulting team to spend longer than one week on the ground, the required travel time between interviews and locations, holidays (Holi) and weekends, and more.

Since a variety of the entities interviewed throughout the time in Kathmandu were GoN and security force officials, another limitation in data analysis was a slight lack of diversity in responses and opinions. Many respondents discussed local-level disaster response and management. However, due to time and travel constraints, the team was unable to meet with sub-national officials and garner firsthand information. Because of this limitation, the project was constrained by a gap of information and connectivity with local level respondents that the team felt would sufficiently aid the development of the final report and recommendations.

To address this concern, future research could be expanded beyond the Kathmandu area, particularly into rural areas. Research outside of Kathmandu could supplement this report and enrich the team's findings by filling the local-level information and connectivity gap. In particular, this would permit a diversity of responses from sub-national government officials, rural populations, and local-level disaster responders. Furthermore, this research could foster a stronger understanding of disaster management needs and practices among all levels of government. This information is especially crucial to possess in the midst of Nepal's recent transition to federalism, which will continue to have significant implications on disaster management, particularly for local-level governments. Research outside of Kathmandu could aid in the national effort to build a more effective and resilient Nepal. Additionally, this expansion of the research's geographical scope could promote more equitable representation across all levels of government and provide critical information for strengthening local-level disaster response.

It is essential to understand the relationship between different marginalized groups and security forces, government agencies, and Nepal's overall disaster management system.

Several other notable themes arose but were beyond the scope of this project due to time, budget, and personnel constraints. These themes present an opportunity for other areas of future research to strengthen the disaster management system within Nepal. For instance, there were significant findings, both in the literature review and field research, on the importance of recognizing and working alongside vulnerable populations in disasters. Specifically, it is essential to understand the relationship between different marginalized groups and security forces, government agencies, and Nepal's overall disaster management system. Research on how vulnerable populations are included in planning and preparedness, specifically in DREEs, tabletop exercises, and other government and security force simulations, could provide critical information about how to better incorporate these groups into disaster management and foster equitable representation. Ultimately, this integration would strengthen the relationships between government agencies, security forces, and vulnerable populations. In the long-run, these measures could result in more effective disaster responses that better meet the needs and perspectives of vulnerable populations.

Conclusion

In the aftermath of the 2015 Earthquake, Nepal has shown a renewed commitment to disaster preparedness and response. Officials within federal agencies, security forces, and NGOs reiterated the importance for Nepal, which routinely faces a wide scope of natural disasters, to implement effective disaster policies and procedures that strengthen institutional capacity, minimize damage to physical infrastructure, and most importantly, save as many lives as possible.

Throughout the team's literature review and interviews, there were multiple recurring themes surrounding Flagship 2 and Flagship 4 that warranted particular attention:

- **the need to establish and enhance structures and systems that can facilitate quick information-sharing across multiple organizations across the country;**
- **cooperation among organizations and states;**
- **the utility of disaster education and training;**
- **the allocation of resources and authority; and**
- **the value of nuanced, context-guided, and need-specific policies.**

All of these considerations are crucial for policymakers to bear in mind moving forward.

Several respondents emphasized that attention to disaster preparedness is oftentimes deprioritized for other "pressing" issues and that the 2015 Nepal Earthquake is rapidly fading into distant memory. The momentum to enhance disaster planning and response, particularly throughout Nepal's transition to federalism, must be maintained by all areas of society, including all levels of government, organizations, and civilians. While many structural challenges remain and the potential costs are high, Nepal is in the midst of a transformative period, where it can overcome these challenges, strengthen its capacity as a nation, and positively impact the livelihoods of generations to come.

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Appendix A *Key Findings and Recommendations*

Domestic Security Forces' Response

	Key Findings	Key Recommendations
1	The Nepal Police are the most dispersed and accessible to the public, yet are insufficiently trained for disaster response	Increase training as first responders and improve equipment to act decisively in the immediate aftermath of a disaster
2	The APF's roles and responsibilities are no longer current nor clear.	Provide clarification of roles and responsibilities within its existing disaster response mandate
3	The Nepal Army is best prepared to conduct disaster response but continue to face equipment and training constraints	Continue training and equipping personnel for the most difficult tasks associated with disaster response
4	The Nepali Army is the relatively removed from local communities compared to the Nepal Police and APF	Encourage platoon representatives to maintain contact with and develop relationships with municipal leadership and local civilians
5	Training Army personnel in remote areas of Nepal is difficult and costly	Create and disperse area-specific MTTs in the Nepali Army to conduct trainings across Nepal
6	The presence of representatives from all national security forces (NA, NP, APF) at district-level preparedness meetings helps to facilitate two-way communication	Sustain inclusive district and municipal level meetings, and expand this practice to the provincial level
7	All of Nepal's security forces tend to work in isolation of each other	Establish systems within the Nepal Police, APF, and Nepali Army for integration with each other and with local, provincial, and federal governments
8	DREEs conducted in coordination with international partners are effective methods of training and relationship-building	Continue and enhance DREEs conducted by security forces to include more participants and realistic exercises
9	Although Nepali Army liaisons exist during disaster response, consistent communication between Clusters and the Nepali Army prior to disaster remain difficult to sustain	Institutionalize relationships between the Nepali Army and various GoN and UN agencies, and NGOs to facilitate pre-disaster national and international-level communication for disaster preparedness
10	Nepali security force personnel oftentimes place themselves in risky situations during disaster response	Develop risk management and mitigation training to mitigate personnel danger

International Response

11	International response, writ large, was appreciated but not efficient	Evaluate potential responders and create bilateral agreements before an incident to ensure a Nepali-led response
12	Many international responders did not have adequate knowledge of the Nepali context and environment	Implement and improve training for international responders on the Nepali context and structures before a disaster strikes
13	International response efforts sometimes conflicted with pre-existing frameworks and policies created by the GoN and regional institutions	Create an identifier for regional responders who have attended SAARC training and prioritize their entry into country

Technology and Communication

14	The security forces do not have adequate contingency plans for communication and public outreach.	Improve communication capabilities and pre-existing systems between the GoN and security forces to build a communications contingency plan and early warning system
15	The security forces lack high tech equipment for disaster response	Pursue bilateral agreements for sharing of satellites and other technology for disaster preparation and response, as well as procuring corresponding training

Transition to Federalism

16	Municipalities lack budget and resources to effectively implement disaster management	Decentralize more of the federal disaster management budget down to the local level
17	There is mixed understanding of responsibilities at all levels of government	Clearly delineate responsibilities between tiers of government, and standardize responsibilities across provincial, district, and local governments when conducting disaster management trainings
18	The provincial level is often excluded from disaster management discussions and policies	Restructure the NDRF to better align with the seven-provinces model
19	Many stakeholders show skepticism of decentralization of disaster response during transition to federalism	Develop federal systems to educate local leaders of their responsibilities and supervisory control of small-scale disaster management in accordance with the GoN's DRR National Strategic Plan of Action
20	Newly established local elections seen as accountability measure	Enable information dissemination to the general public on civil disaster management capacity to inform voting

21	Quality of municipality preparedness heavily influenced by traits and knowledge of individual mayors	Conduct and publish regular audits on municipalities' disaster preparedness plans
22	Information sharing mechanisms insufficiently reach rural areas relative to urban areas	Expand information sharing mechanisms to improve access to best emergency management practices, particularly in rural areas

Appendix B *Interview Questionnaire*

Nepal Disaster Preparedness and Risk Reduction

Priority Areas: Emergency Preparedness and Response Capacity, and Integrated Community-Based Risk Reduction and Management

Purpose of Questionnaire

Hello, our names are (_____). We are consultants conducting field research on behalf of the Center for Excellence in Disaster Management (CFE-DM), U.S. Department of Defense. Our research is designed to identify areas of strength and areas of improvement in disaster management, response and risk reduction that would directly support the Government of Nepal's post-2015 Earthquake goals and objectives to assure a more resilient Nepal. The focus of our interviews concern activities within two priority areas mentioned and will include areas of civilian-military coordination. Any and all information you share with us will be kept strictly confidential and your identity will not be disclosed in any way without your consent. A final report to CFE-DM will identify the results of our analysis.

Recorder Permission

To make sure our notes correctly represent what you say, we would also like to take a sound recording. The recording is confidential and will not be shared around. We may develop quotes from the recording, but you will not be named, and they will not be attributed to your organization. Please review and sign this waiver in order to indicate whether or not you grant consent.

With respect to time, we are looking for a 1-2 minute response per question.

Personal Info Questions

1. What is your name and position/rank in your organization?
2. Would you spell your name? This is for internal purposes only.
3. How long have you been serving in this role?
4. How long have you been serving in Nepal? (if applicable)
5. What Government of Nepal ministries, military, or other agencies do you personally work with in your current role/position?

Emergency Preparedness and Response Capacity

1. In your opinion, what were the most effective methods for civilian-military communication and information sharing during the 2015 Earthquake response?
    a. What technological platforms were the most effective in aiding civilian-military communication efforts during the response?
    b. From your experience, what were the most significant challenges in civilian-military communication and information sharing during the 2015 Earthquake response?
    c. How well do you think the Nepali Army communicates with civilian stakeholders in a disaster response situation?
    d. How is your organization conducting Phase Zero training?
    e. What should be sustained and what could be improved?
2. *[The Nepali Army was the primary organization involved in immediate disaster response efforts following the 2015 Earthquake, with a reported 90% of the Nepali Army involved in the response efforts.]*What was your perception of the Nepali Army during the 2015 Earthquake response?
    a. How has your perception of the Nepali Army (in their capacity as a disaster response actor) changed since 2015?
    b. (If negative perception) What are the areas of opportunity for improving the perception of the Nepali Army in their capacity as a disaster response actor?
    c. With 5 being very trustworthy and 1 being very untrustworthy, currently, how would you characterize the level of trust civilians have in the Nepali Army during disaster response situations?

5-Very Trustworthy	4-Somewhat Trustworthy	3-Neutral	2-Somewhat Untrustworthy	1-Very Untrustworthy

4. What was your perception of the international military community during the 2015 Earthquake response?

    a. If there is a negative perception, what are the areas of opportunity for improving the perception of the international military community in their capacity as a disaster response actor?

    b. With 5 being very trustworthy and 1 being very untrustworthy, currently, how would you characterize the level of trust Nepali civilians have with a foreign military presence during disaster response situations?

5-Very Trustworthy	4-Somewhat Trustworthy	3-Neutral	2-Somewhat Untrustworthy	1-Very Untrustworthy

    c. Is there anything else, historical, cultural or otherwise, that you would like to add about the perception of a foreign military presence during disaster response situations?

Integrated Community-Based Disaster Risk Reduction/Management

5. How effective are VDC Secretaries in ensuring disaster preparedness at the village and local level(s)?

    a. What actions and resources could increase the effectiveness of this role?

    b. What VDCs have stood out to you as exceptional?

6. *[With the adoption of the new Constitution of Nepal in 2015, and the transition to seven federated states, the nation has prioritized a move towards decentralization.]* In your opinion, how will this transition affect disaster planning and preparedness across Nepal?

    a. What opportunities or challenges does this transition present to disaster planning and preparedness?

Wrap Up/Ending

1. Is there anything else you would like to add regarding your experiences with civilian-military communication or coordination, or any topic we discussed here today?
2. Is there anyone else you suggest we speak with to further inform our research?
3. If so, how may we contact them?
4. Can we contact you if we have any follow up questions or need clarification?
5. If so, how can we reach you?
6. The information you provided has been very helpful and if you would like to follow-up on how this information is used, you can reach us at _____.