International Response to 2015 Nepal Earthquake
Lessons and Observations

Alistair D. B. Cook [1], Maxim Shrestha [2], and Zin Bo Htet [3]

1 Research Fellow and Coordinator of Humanitarian Assistance and
Disaster Relief Programme, RSIS' Centre for Non-Traditional Security (NTS) Studies
2 Associate Research Fellow, RSIS' Centre for Non-Traditional Security (NTS) Studies
3 Research Analyst, RSIS' Centre for Non-Traditional Security (NTS) Studies

Centre for Non Traditional Security Studies (NTS)
S. Rajaratnam School of International Studies
Nanyang Technological University, Block S4,
Level B4, 50 Nanyang Avenue, Singapore 639798
Tel: +65 6790 6982
Fax: +65 6793 2991
RSISPublications@ntu.edu.sg

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Executive Summary

The international response to the 7.8 magnitude earthquake that struck central Nepal at midday on 25th April 2015 was one of the biggest humanitarian and disaster response operations of the year. The powerful tremor and aftershocks led to the loss of close to 9,000 lives, injured over 23,000 people, fully destroyed over half a million homes, displaced over 60,000 people, and resulted in total economic losses of approximately US$ 9 billion. The overwhelming international response which followed included immediate search and rescue personnel and support, medical teams and support, emergency relief items, as well as assets, from aircrafts to deliver aid, to other equipment and machinery to assist in the relief effort.

Altogether 34 countries physically responded to the disaster, 17 of which also sent their respective military teams to assist in the immediate search and rescue phase. Bilateral aid in terms of relief items as well as financial aid was received from approximately 70 countries worldwide. In addition to this, the response also included the participation of many United Nations agencies and other international humanitarian organisations like the ICRC, IFRC, MSF, Oxfam, World Vision, CARE international, International Medical Corps, and Save the Children. There were many smaller NGOs and private sector commitments that significantly contributed to the relief effort.

The Humanitarian Assistance and Disaster Response (HADR) research team at the NTS Centre, S. Rajaratnam School of International Studies (RSIS) studied the international response to the 2015 Nepal earthquake to understand the dimensions and scope of the international response and to distil field observations from this particular experience. The research revealed that most international responders and parties in Nepal, who were beneficiaries of the response, considered immediate search and rescue, and relief operations a success. There was however a number of lessons which emerged from the experience for both the affected country as well as international responding parties.

Through a primary focus on the immediate relief phase following the disaster, this report identifies four themes: (i) Strategic Planning; (ii) Aid Delivery; (iii) Aid Provision; and (iv) Aid Distribution. The following recommendations from the research on Nepal is to ensure greater effectiveness and efficiency for future HADR responses. While this research assessed a relatively small but critical window, and some of the lessons were context specific, it is hoped the recommendations which have emerged will help make future international humanitarian assistance and disaster response more effective.

Strategic Planning

- Attention to building trust between stakeholders during non-emergencies over the longer term is a key ingredient to an effective international HADR response and to overcome potential bottlenecks through stronger inter-personal relationships.

- Raise awareness of national and local regulatory frameworks by crafting context specific guidelines and standard operating procedures (SOPs) between responders and recipients.

- Increase awareness of UN and other key global and sub-national institutions like Village Development Committees in Nepal, as these institutions are first responders to an emergency and work with them in some form becomes almost inevitable.

- Ensure better contextual understanding and awareness of local and national customs by prioritising human resources from the country of disaster.

- Provide sensitivity training for international responders and volunteers in terms of operations and fundraising to ensure better preparedness and the collection of needed goods and materials.

- Institutionalise transparency and accountability of international responders for relief and aid.

Aid Delivery

- Establish communication with the authorities in affected countries prior to the transportation of assistance to minimise congestion and reduce unneeded aid and materials.

- Develop an aid registry system to track both physical and virtual aid available in countries where aid is being collected as well as in the disaster-affected country.

Aid Provision

- Establish inclusive response teams which includes female responders as well as personnel with complementary expertise and skill sets.

- Calibrate relief priorities according to the needs of the affected population as well as the availability of goods and assets being provided by other responders to ensure the United Nations priority list is fully covered.

- Monitor policy developments of the affected country to identify updated regulations, particularly concerning customs, regulation of certain types of machinery (like UAVs), and visa and immigration matters for responding personnel.

Aid Distribution

- Increase awareness and collaborate (if possible) with local networks and organisations in the affected country, especially with those that have good local knowledge and access at the local community level including local youth clubs, private sector and business clubs, and religious organisations.

- Assess direct cash distribution as a primary form of aid for affected populations.

Introduction

On 25th April 2015, a 7.8 magnitude earthquake struck central Nepal with the epicentre around Barpak, Gorkha district. Given the relatively shallow hypocentre at a depth of just 15km, tremors were felt across the South Asian subcontinent including parts of the Tibet Autonomous Region in the north, but the majority of loss and damages was concentrated in Nepal. The powerful tremor and aftershocks had significant impacts in over 30 districts of Nepal including the Kathmandu Valley. Official data puts the total loss of lives at 8,969, with 22,321 injured, and 602,592 homes fully destroyed.[1] It is also estimated that the disaster left over 60,000 people displaced and resulted in economic losses of over US$ 9 billion.[2]

There was an overwhelming international response to the disaster with many countries, International Organisations, Red Cross and Red Crescent Movement, and humanitarian NGOs offering immediate search and rescue personnel and support, medical aid, emergency relief items, as well as goods and services geared towards the recovery and rehabilitation phases. Much of the international support also came in the form of aircrafts to deliver aid to other equipment and machinery to help in the post disaster effort. As a result of the concerted international humanitarian effort, Nepal became inundated with assets, donations and personnel. The nation struggled to cope with the overwhelming humanitarian assistance as it went beyond its capacity to manage the humanitarian process. This NTS Report investigates the scale of the response; the challenges faced by both local and international responders, and catalogues the reflections of disaster responders so as to offer insights into the disaster governance of the Nepal Earthquake 2015 and identify concrete areas on how to improve humanitarian coordination and effectiveness in future disaster responses across the world.

This research focused primarily on the immediate international response to the earthquake in Nepal as an important component of the disaster management cycle.[3] Although it is challenging to define, demarcate, and assess which contribution is for immediate response and which is for a much longer-term period, the emergency disaster response studied covers the period of 25th April to 17th May 2015. This period spans from the activation of disaster response until the United Nations Disaster

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[1] 'Nepal Earthquake 2015: Country Profile', International Centre for Integrated Mountain Development (ICIMOD), last accessed on 26 July 2016, http://apps.geoportal.icimod.org/ndrrip/profile?id=Country&Lang=en
[2] Ibid.
[3] The disaster management cycle includes four distinct phases: (i) mitigation, (ii) preparedness, (iii) response; and (iv) recovery. For a more detailed discussion, see Laura G. Vasilescu, Asmatullah Khan and Himayatullah Khan, 'Disaster management cycle–a theoretical approach', *Management & Marketing-Craiova*, no. 1 (2008): 43-50.

Assessment and Coordination (UNDAC) was demobilised[4] and foreign military aid missions left Nepal.[5]

Within 3 to 4 hours of the earthquake, the government of Nepal issued a request for international assistance, which generated a response from 34 countries. This translated into 76 Urban Search and Rescue (USAR) teams comprising 2,242 personnel and 135 K-9 dogs; 141 Foreign Medical Teams (FMT) comprising 1,858 medical professionals; and a total of 18 foreign military teams.[6] The foreign military teams comprised engineers, air support personnel, medical professionals, and search and rescue experts and came from Algeria, Bangladesh, Bhutan, China, Canada, India, Indonesia, Israel, Japan, Malaysia, Pakistan, Poland, Singapore, Spain, Sri Lanka, Thailand, UK, and USA.[7] India was the first international team to respond with its teams arriving within the first 12 hours.[8] This was followed by teams from Nepal's neighbours, China, Sri Lanka, Bangladesh and Bhutan. Teams from 14 countries further afield (a total of 1966 personnel) arrived in Nepal within the first 72 hours, and the remaining teams arrived within the first week.[9]

Foreign military air assets were the most important and critical assets deployed to Nepal after the earthquake.[10] Other than a fleet of 12 helicopters operated by the Nepal military, and approximately 10 operated by the private sector, little appropriate air capabilities were available in the country. The biggest challenge faced in the aftermath of the earthquake was access to various affected regions which were only accessible by air[11] making international support a crucial element to the disaster response effort. A total of 23 military helicopters and one C-17 aircraft from India, China and the USA were transported and stationed in Nepal for the duration of the operations.[12]

The broader international humanitarian community also contributed significantly in response to the Nepal earthquake. In addition to various UN agencies, other agencies in the relief effort were the ICRC, IFRC, MSF, Oxfam, World Vision, CARE International, International Medical Corps, and Save the Children. Many of these institutions already had a history of working in Nepal with most also having

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[4] Interview with UN-OCHA official, 18 March 2016.
[5] 'U.S. Military prepares to leave Nepal at end of relief mission,' *Today*, 20 May 2015.
[6] Nepalese Army (NA), *The Nepalese Army in the aftermath of the Gorkha earthquake of 2015: Experiences and lessons learned* (Kathmandu: NA, 2015).
[7] Ibid.
[8] Ravi Agrawal, "Nepal earthquake: India leads massive aid effort to help survivors," *CNN*, 27 April 2015. http://edition.cnn.com/2015/04/27/asia/nepal-quake-india-aid/ (last accessed 26 July 2016).
[9] Viviana De Annuntiis, 'Humanitarian Civil-Military Coordination in the Nepal Earthquake Response' (presented at the Regional Consultative Group on Humanitarian Civil-Military Coordination for Asia and the Pacific, Bangkok, Thailand, 3–4 December 2015).
[10] Interview with Officer of Nepal Army, 28 March 2016.
[11] Viviana De Annuntiis, 'Humanitarian Civil-Military Coordination in the Nepal Earthquake Response' (presented at the Regional Consultative Group on Humanitarian Civil-Military Coordination for Asia and the Pacific, Bangkok, Thailand, 3–4 December 2015).
[12] 'Nepal Earthquake: National and Foreign Military Deployed Air Assets (as of 07 May 2015)', UN-OCHA, accessed 20 April 2016, http://reliefweb.int/sites/reliefweb.int/files/resources/Nepal_FMDA_070515.pdf

local offices;[13] this proved critical in the coordination of relief aid and personnel from abroad. In the first month after the earthquake, the World Food Programme (WFP)[14] handled 3,100 metric tonnes of relief goods such as shelter, medical supplies, food, water, sanitary and hygiene goods. This amount excludes relief items donated bilaterally by foreign governments to the government of Nepal, which was also a significant bulk of relief goods brought into the country.[15]

Major foreign donors to Nepal also pledged US$4.4 billion in aid mostly aimed at the major reconstruction efforts required after the earthquake. Of this total, half was offered to Nepal in terms of loans and the remaining half as grants. The largest pledge came from India which promised US$ 1billion, followed by China's RMB 3 billion (US$ 483 million) contribution.[16] From Southeast Asia, seven out of the 10 ASEAN member states were involved in the response as volunteers, relief workers and disaster experts, or in terms of collection and dispatch of relief supplies and monetary donations. This included Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam. In terms of foreign personnel involved in the relief effort, Singapore and Indonesia ranked in the top 10: 5th [182 people] and 10th [105 people] respectively, while Thailand [54 people] and Malaysia [47 people] were 16th and 17th respectively.[17] In total there were 406 officials from ASEAN member states involved in the immediate post-disaster response.

Overall, the response to the Nepal earthquake in 2015 was considered a success by most parties interviewed in the course of this research. One of the reasons for this was that the earthquake was expected and anticipated[18] to some degree by experts, the Nepali government, the UN and humanitarian agencies[19] for at least a decade. It has been historically documented and is well-known that Nepal experiences one major earthquake at intervals of approximately 100 years. The last major earthquake had a magnitude of 8.4 that struck eastern Nepal in 1934.[20] Nepal was thus already on the radar of many humanitarian and development organisations for being one of the most vulnerable countries to natural hazards. The emerging global Disaster Risk Reduction (DRR) agenda

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[13] Other than MSF, all international NGOs listed earlier have a local office in Nepal. MSF coordinated their Nepal response operations from their nearest office in New Delhi.

[14] The WFP is the coordinating agency of the UN Logistics Cluster under the framework for global humanitarian response.

[15] Immediate relief and emergency supplies donated bilaterally were under the purview of the Nepal government and not the Logistics Cluster. Within the first week, aid from India and China alone was close to 1,500 metric tons. See, Ministry of Foreign Affairs of the People's Republic of China, 'Foreign Ministry Spokesperson Hua Chunying's Regular Press Conference on May 6, 2015', press release, 6 May 2015, http://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/2511_665403/t1261334.shtml and 'Operation Maitri in full swing to pull Nepal out of rubble', *The New Indian Express*, 28 April 2015, http://www.newindianexpress.com/nation/Operation-Maitri-in-Full-Swing-to-Pull-Nepal-Out-of-Rubble/2015/04/28/article2786787.ece

[16] 'Donors pledge $4.4bn in aid to quake-hit Nepal,' *Agence France-Presse (AFP)*, 24 June 2015, http://reliefweb.int/report/nepal/donors-pledge-3bn-aid-quake-hit-nepal

[17] Nepalese Army (NA), *The Nepalese Army in the aftermath of the Gorkha earthquake of 2015: Experiences and lessons learned* (Kathmandu: NA, 2015).

[18] M. R. Pandey et al., 'Seismotectonics of the Nepal Himalaya from a local seismic network', *Journal of Asian Earth Sciences*, no. 17 (1999): 703-712.

[19] Gabriella Buescher, 'Mid-Term Evaluation of the Comprehensive Disaster Risk Management Programme' (CDRMP, 2013).

[20] Angus Macleod Gunn, 'Bihar, India, earthquake', in *Encyclopedia of Disasters: Environmental Catastrophes and Human Tragedies*, (Greenwood Publishing Group, 2007): 337–339.

also led to numerous initiatives by NGOs, oftentimes in collaboration with the government of Nepal, to set-up a disaster management framework and coordination mechanism, including the establishment of National Disaster Management Centre in 2002.[21] As a high risk country, government officials participated in preparedness exercises with international agencies including foreign militaries. Similarly, the UN also prepared plans for disaster response to Nepal ahead of time. One of the most significant initiatives was the establishment of the humanitarian staging area within the vicinity of Kathmandu's Tribhuvan International Airport to be operated by the UN Logistics Cluster in the event of an emergency. Similar preparedness and contingency plans of other international NGOs, especially in the regions of the country where they operated, helped in minimising confusion and ensuring relatively smooth delivery and distribution of relief aid.

Despite the pre-existing plans and relatively positive perceptions regarding the international response to Nepal, research has revealed that certain areas could have been improved. These observations cut across various aspects of response including strategic planning, aid delivery, aid provision, and aid distribution. Some of these can be found in emerging literature on the Nepal earthquake experience, while others were discovered during the course of the fieldwork. This report firstly reviews available literature on the Nepal earthquake response. Secondly, it presents the findings and observations from field interviews conducted with international responders to the Nepal earthquake as well as the recipient agencies of the international relief effort in Nepal. Finally, this report identifies broad trends and lessons from the Nepal experience to inform stakeholders for similar international humanitarian missions in the future.

Literature Review

This literature review assesses the emerging literature from the Nepal Earthquake, focusing primarily on the search and rescue, and immediate relief phase. The literature includes reports, academic journal articles[22] and publications from various humanitarian agencies such as the Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP),[23] Assessment Capacities Project (ACAPS),[24] the International Federation of Red Cross and Red Crescent Society

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[21] 'Nepal Disaster Risk Reduction Portal', Government of Nepal, last accessed on 26 July 2016, http://drrportal.gov.np/
[22] Such as F. Kees Boersma et al., 'Humanitarian response coordination and cooperation in Nepal. Coping with challenges and dilemmas', *VU Amsterdam: White Paper*, 2016.
[23] David Sanderson and Ben Ramalingam, 'Nepal earthquake response: Lessons for operational agencies', *Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP)*, 2015.
[24] Assessment Capacities Project (ACAPS), 'Lessons learnt for Nepal earthquake response', 27 April 2015, http://www.acaps.org/special-report/lessons-learned-nepal-earthquake-response.

(IFRC),[25] and Save the Children,[26] as well as publications from national actors such as the Nepali Army.[27] While much of the literature tends to take a more long-term view of international disaster response which includes the rehabilitation and reconstruction phases of the disaster cycle, this research focused primarily and where possible exclusively, on the immediate response period. In the case of Nepal this was approximately three weeks after the earthquake, when both civilian and military immediate response teams started to wind down operations and leave the country. This section identifies the principles of humanitarianism and offers a typology of humanitarian actors involved in disaster and emergency response, and then reviews the literature under four themes, (1) the role of national and local actors, (2) coordination and cooperation, (3) vulnerable groups in disaster response, and (4) medical facility challenges.

Humanitarian actors responding to disasters and complex emergencies represent a wide cross section of the international community but are bound by the four core humanitarian principles of humanity, impartiality, neutrality, and independence. All humanitarian work is based on the principle of humanity whereby human suffering must be addressed wherever it is found. It needs to be carried out impartially, with assistance provided regardless of nationality, race, gender, religious beliefs or political opinion. Humanitarian actors must also act neutrally and not take sides in hostilities or have preference for one affected group over another. Lastly, humanitarian assistance must be independent and delivered autonomously from military, political or economic objectives. These principles provide the foundations for humanitarian action and are central to effective humanitarian coordination. In addition, humanitarian actors must uphold to 'do no harm' and minimize the harm they may be inadvertently doing by providing assistance. The principle of 'do no harm' states that any unintended consequences of humanitarian assistance should be critically examined and any negative consequences should be negated[28] for the disaster affected population. In disaster contexts, principled civil-military coordination is critical to protecting humanitarian principles for an effective disaster response.

In recent years civil-military relations has faced a number of major challenges including the increasing number and scale of natural disasters, the rapid proliferation of humanitarian actors including NGOs and the private sector, and the increasing international interventions in fragile and conflict affected states. One of the key challenges to coordination is the different cultures of military

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[25] International Federation of Red Cross and Red Crescent Societies (IFRC), 'World Disaster Report 2015: Focus on local actors, the key to humanitarian effectiveness', 2015, https://ifrc-media.org/interactive/wp-content/uploads/2015/09/1293600-World-Disasters-Report-2015_en.pdf.
[26] Rebecca Barber, 'Did the humanitarian response to the Nepal earthquake ensure no one was left behind? A case study on the experience of marginalised groups in humanitarian action', *Save the Children* (March 2016).
[27] The Nepalese Army, 'The Nepalese Army in the aftermath of the Gorkha earthquake of 2015: Experiences and lessons learnt', (Kathmandu: NA, 2015).
[28] United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), 'Humanitarian civil-military coordination: A guide for the military', *Civil-Military Coordination Section*, Vol. 1, (July 2014).

and humanitarian actors. The humanitarian community is a network of actors that comes together with common funding sources and voluntary standards, without an effective chain of command. It contrasts with militaries, which are characterised as hierarchical and output-driven.[29] Militaries often prefer to adapt disaster responses to fit more closely with their own training and abilities and the militarisation of civilian functions in disaster management might raise tensions with international donor agencies and NGOs.[30] There is thus a need for enhanced dialogue across humanitarian actors on the evolving challenges of civil-military relations. There is also a need for greater involvement of militaries, NGOs and civil society groups in such dialogues. Improved civil-military relations in humanitarian response will not only lessen inefficiency and confusion for both military and humanitarian actors, but ultimately, improve the quality of humanitarian assistance to vulnerable populations when they need it most.

Typology of humanitarian actors

Humanitarian actors are categorized into six groups; (1) governments, (2) military, (3) the UN agencies, (4) the Red Cross and Red Crescent Movement (RCRC), (5) civil society actors and non-governmental organizations (NGOs), and (6) the private sector. Firstly, governments refer to local, national and foreign governments. A national government plays a critical role in disaster relief yet their capacity in disaster response remains varied across the Asia-Pacific. This poses significant challenges to countries most exposed to disasters. Paul Harvey (2009) highlights that national governments have four main roles and responsibilities in humanitarian aid; (1) 'calling' a crisis and inviting international aid, (2) providing assistance and protection, (3) monitoring and coordinating external assistance, and (4) setting the regulatory and legal frameworks governing relief assistance.[31] However, oftentimes governments do not call for external assistance but will take it when offered by friendly countries and allies. This is an important if subtle difference in how to approach countries affected by natural disasters in times of need. Foreign governments' relief assistance is essential especially when the affected country has limited capacity and resources to respond to and manage disasters. Nevertheless, international aid depends on the consent of the national government of the affected country. The case of the 2008 Cyclone Nargis in Myanmar illustrated the difficulties in

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[29] Victoria Metcalfe, Simone Haysom and Stuart Gordon, 'Trends and challenges in humanitarian civil-military coordination: A review of the literature', *HPG Working Paper*, (May 2012): 5-6.
[30] Yang Razali Kassim, 'Emerging trends in Southeast Asia', *S. Rajaratnam School of International Studies* (2009): 26.
[31] Paul Harvey, 'Towards good humanitarian government: The role of the affected state in disaster response', *Humanitarian Policy Group*, (September 2009): 5-6.

providing relief assistance without government consent[32] and the important role that engagement outside of crisis periods plays in determining access to affected populations.

Secondly, militaries have played an important role in various aspects of disaster relief operations, such as transportation, communication, food and water supply and medical care. While the primary responsibility for disaster response lies with civilian agencies, only the military has the manpower, equipment and training necessary to offer the relief surge required during immediate disaster response. Wiharta et al., (2008) argues that the main reason to employ militaries is timeliness, particularly in the first stages of relief.[33] Militaries not only have the necessary equipment to supply large quantities of relief products to the disaster areas, but their helicopters can support search-and-rescue operations.[34] The timely arrival of soldiers and officers is essential in disaster relief operations. However, there have been tensions around the use of military assistance for humanitarian purposes. The expansion of military engagement in activities beyond their traditional mandates, such as emergency relief operations and 'counter-insurgency', have often blurred the lines between military and humanitarian action. For example, in recent counter-insurgency operations in Afghanistan, Iraq and Pakistan, militaries have sought to use humanitarian assistance and aid provision to 'win hearts and minds' among civilian populations.[35] In the aftermath of a disaster, militaries are largely deployed with the agreement of the disaster-affected country and as a result are less often confronted with obstacles and difficulties in working with other humanitarian parties, save for situations of complex humanitarian emergencies. Complex humanitarian emergencies are where disaster-affected communities are home to pre-existing tensions such as political violence or internal conflict in the case of Aceh after the 2005 Indian Ocean Tsunami.

Thirdly, the main UN agencies with a disaster relief mandate include the Office of the Coordination of Humanitarian Affairs (OCHA) and the United Nations Disaster Assessment and Coordination (UNDAC). OCHA facilitates the humanitarian and disaster relief efforts of the UN system and is responsible for bringing together humanitarian actors to ensure a coherent response to emergencies. OCHA's main roles are to mobilize and coordinate effective and principled humanitarian action in partnership with national and international actors, to advocate the rights of people in need, to promote preparedness and prevention and to facilitate sustainable solutions.[36] There are four phases in the disaster management cycle; response, recovery, mitigation and preparedness. UNDAC is designed to help the governments of disaster-affected countries during the

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[32] Ibid., 6-7.

[33] Sharon Wiharta et al., 'The effectiveness of foreign military assets in natural disaster response', *Stockholm International Peace Research Institute*, 2008, 32-34.

[34] Ibid.

[35] Julia Brooks, 'Challenges of Civil-Military engagement in humanitarian action: An overview', *Harvard Humanitarian Initiative,* 18 March 2015.

[36] UN-OCHA, 'Who we are', accessed 5 August 2016, http://www.unocha.org/about-us/who-we-are.

first phase of a sudden-onset emergency and UNDAC teams are deployed upon the request of the affected government. OCHA plays a key role in operational crisis coordination which includes needs assessment, funds and resource mobilization, developing common strategies to address issues such as negotiating access and monitoring progress.

Fourthly, the RCRC movement comprises three core components; 187 National Red Cross and Red Crescent Societies, International Federation of Red Cross and Red Crescent Societies (IFRC), and the International Committee of the Red Cross (ICRC). The three components operate worldwide with a mission to prevent and alleviate human suffering, to protect life and health, and to ensure respect for human beings, particularly in times of armed conflict and other humanitarian emergencies. National Red Cross and Red Crescent Societies (National Societies) are the first points of contact for governments requesting relief assistance. The National Societies work alongside national and local public authorities during disasters. The IFRC coordinates and directs assistance in natural disasters in support of the National Society. The ICRC is an impartial, neutral and independent organization mandated to protect the lives and dignity of victims of war, natural disasters and other situations of violence and provide them with assistance.[37] These three components operate worldwide to prevent and alleviate human suffering wherever it may be found.

Fifthly, civil society actors can be divided into two categories; national and community-based NGOs, and international NGOs. National and community-based NGOs work independently and also support disaster response activities of governments, UN agencies and larger international NGOs. They generally have strong community-based networks critical to reaching disaster-affected communities and were recognized as the necessary centre of humanitarian action at the World Humanitarian Summit in 2016.

Lastly, private sector companies are increasingly involved in disaster response as donors and direct service providers, among other roles. For instance, logistics firms such as DHL and UPS have been working to support humanitarian logistics in disaster response. They have collaborated with aid agency logisticians to improve processes and enhance effectiveness, and have delivered large volumes of aid.[38] Of late, the private sector has contributed more extensive support, which takes the form of collaborative partnerships between the private sector and humanitarian organisations. This includes the provision of training and operational management schemes and the transfer and application of technologies.[39] These humanitarian actors were actively involved in responding to the

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[37] UN-OCHA, 'International Humanitarian Architecture', accessed 5 August 2016, http://www.unocha.org/publications/asiadisasterresponse/InternationalHumanitarianArchitecture.html
[38] Steven A. Zyck and Randolph Kent, 'Humanitarian crises, emergency preparedness and response: the role of business and the private sector', *Humanitarian Policy Group* (July 2014): 12.
[39] Humanitarian Futures Programme, 'The private sector challenge: Final report', *King's College,* (December 2013): 17.

Nepal earthquake. From disaster response to the recovery phase, a significant relief and recovery effort was carried out by humanitarian actors from a wide range of organizations and agencies.

The role of national and local actors

National and local actors play a critical role in disaster relief and there is a focus on the importance and capacity of national and local actors to respond to disasters across the Asia-Pacific. David Sanderson and Ben Ramalingam (2015) highlight that many international responders did not engage and collaborate with national and local actors in the aftermath of the Nepal Earthquake.[40] National actors in Nepal such as the National Emergency Operation Centre (NEOC) of the Ministry of Home Affairs play a central role in national-level disaster management, supported by chief district officers and village development committees at the sub-national level. National Non-Governmental Organizations (NGOs), such as the National Society for Earthquake Technology-Nepal (NSET) which has 20 years' experience of earthquakes in Nepal was another key stakeholder.[41] Their research underlines the importance of working closely with these national actors to lessen gaps in relief and recovery efforts. Community-based organisations are often unrepresented in national and municipal structures, but were acknowledged as critical partners in the immediate relief efforts and long-term recovery. The study also identified new partnerships among different actors, including the private sector, as crucial to the success of effective assistance. For example, cash-based assistance to local shops replenished stocks and allowed them to start trading again, which helped kick-start local economies.[42]

Many studies highlight that local actors are always the first to respond to disasters and emphasize that it is important to work closely with local actors for effective disaster response. The World Disaster Report (2015) highlights local actors as the key to humanitarian effectiveness. The report states that their effectiveness goes beyond their proximities because of their understanding of local contexts.[43] The ACAPS (2015) study underlines the importance of engaging with the local community and harnessing their capacity in response and needs assessment, as well as their ability to establish the best channels and methods. The influx of humanitarian organizations posed a huge challenge to

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[40] David Sanderson and Ben Ramalingam, 'Nepal earthquake response: Lessons for operational agencies', *Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP)*, 2015.
[41] Ibid., 6
[42] Ibid., 10
[43] International Federation of Red Cross and Red Crescent Societies (IFRC), 'World Disaster Report 2015: Focus on local actors, the key to humanitarian effectiveness', 2015, 8-9, https://ifrc-media.org/interactive/wp-content/uploads/2015/09/1293600-World-Disasters-Report-2015_en.pdf.

the overall effectiveness of response, resulting in gaps and overlaps of aid packages.[44] In addition, relief supplies did not necessarily match what is needed on the ground; even basic requirements such as food, water and medical supplies did not address the needs of the affected population.[45] The literature highlights that it is important to engage with the local community and listen to residents' needs and concerns in order to plan an efficient response strategy. Local communities have strong relationships, important norms, and effective leaders and are the very first responders to a natural disaster.

International organisations continue to highlight that a people-centred approach is essential in providing humanitarian assistance to all those affected. A people-centred approach recognizes that a person's gender, age and other diverse characteristics have a significant impact on how they experience emergencies and access assistance. Through the participation of affected populations, a people-centred approach ensures that humanitarian action is inclusive. Scolobig et al. (2015) argue that disaster management as a whole has been significantly re-focused from a top-down, command and control style of management, to a people-centred approach with a focus on local participation.[46] This study also implies that integrating a people-centred approach to humanitarian response is critical to a more effective and coordinated response to emergencies and disasters in the region. The efficiency of disaster relief operations largely depends on how well capabilities are used within the larger operation and how the relief operation is coordinated by various humanitarian actors. Coordination between civilian humanitarian actors and the military has been one of the greatest challenges in disaster response particularly given the shift towards a people-centred approach that is distinct from a command-and-control structure. Differences in cultures, priorities and operating methods between military and civilian actors can have large impacts on information management, which is essential for the success or failure of any relief operation. The increasing number and scale of natural disasters and emergencies have led to more situations where military and civilian relief organizations are operating in the same environment. As such, there is a need for a framework to ensure the mutually reinforcing nature of development and humanitarian work to overcome coordination issues and effectively deliver relief.

Coordination and cooperation challenges

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[44] Assessment Capacities Project (ACAPS), 'Lessons learnt for Nepal earthquake response', 27 April 2015, 2, http://www.acaps.org/special-report/lessons-learned-nepal-earthquake-response.
[45] S. Rajaratnam School of International Studies (RSIS), 'World Humanitarian Day: Voices from the field', *RSIS Centre for NTS Studies*, 19 August 2015, 7, https://www.rsis.edu.sg/wp-content/uploads/2015/12/World-Humanitarian-Day-Voices-From-the-Field.pdf.
[46] Anna Scologib et al., 'Towards people-centred approaches for effective disaster risk management: Balancing rhetoric with reality', *International Journal of Disaster Risk Reduction* (2015): 2-3.

One of the major challenges humanitarian actors faced in responding to disasters is coordination and cooperation between a wide range of responding organizations and agencies. Large-scale disasters go beyond the capacity of one single organization and the operation is shared by diverse actors who may have to work together yet have rarely met in the past or not at all. In the international relief effort that followed the Nepal earthquake, coordination was a new experience for many of the international responders operating outside of the UN Cluster system. The coordination challenges included the lack of a common language, differences in contextual analysis, culture, and lack of familiarity with respective mandates. Kees Boersma et al. (2016) indicate that humanitarian actors faced challenges in coordination and cooperation between the various responding organizations and governmental bodies in the aftermath of the Nepal earthquake.[47] In the immediate aftermath of the disaster in Nepal, a number of formal coordination mechanisms were activated such as the NGO Federation of Nepal, which brings together both national and international NGOs working in the same geographical area. At the local level, government-run District Disaster Response Committees (DDRC), were also tasked to help and enable coordination between different humanitarian actors. The Nepali Army established the Multi National Military Coordination Centre (MNMCC) immediately after the earthquake, which helped in systematic mobilization and coordination of international search and rescue teams that arrived in Nepal in the form of multinational military assistance. In addition, OCHA facilitated the coordination process between military and civilian actors. Prior to the earthquake, OCHA implemented emergency response preparedness that focused on key areas such as planning coordination with the government of Nepal and the Nepal Army. OCHA supported and facilitated the linkage between the National Emergency Operation Centre (NEOC), the military-to-military coordination mechanism and humanitarian actors. Their study found that the humanitarian response organizations in Nepal had to find a balance between established coordination mechanisms implemented by OCHA to support coordination efforts between various NGOs, and response initiatives that emerged in the local community.

The Asia Foundation (2015) discovered that multiple aid agencies initially acted without the coordination required to efficiently target and distribute relief, which increased confusion and tensions over aid distribution during the early relief phase. For instance, many aid providers initially bypassed government channels for relief coordination, distributing directly along highways and accessible roads.[48] The report highlights that DDRCs had trouble controlling incoming relief and

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[47] F. Kees Boersma et al., 'Humanitarian response coordination and cooperation in Nepal. Coping with challenges and dilemmas', *VU Amsterdam: White Paper* (2016): 5-7.
[48] The Asia Foundation, 'Aid and recovery in post-earthquake Nepal: Independent impacts and recovery monitoring Nepal phase 1', *Qualitative field monitoring*, June 2015, 39-45, https://asiafoundation.org/resources/pdfs/AWSynthesisreportinteractivePDF.pdf.

distributing it more widely across affected areas. In high impact districts, aid providers were also present in large numbers which made it difficult to monitor their activities. In addition, their report states that coordination was particularly difficult and the response was slower where government officials were absent during the earthquake. The lack of information on and coordination of incoming aid intensified confusion around aid distribution particularly in high impact districts, where the number of aid providers was higher. The Nepali Army produced a report on lessons learnt from the earthquake in 2015, which also states that several relief organizations were distributing relief materials randomly and in an uncoordinated manner, which resulted in the unequal distribution of relief materials.[49]

It is therefore of significant importance that humanitarian organizations identify and choose suitable partners to work with through the UN cluster system in responding to natural disasters. Sharon Wiharta et al., (2008) argue that coordination is critical to the success or failure of a disaster relief operation. The degree of coordination between different actors affects not only the efficient running of the operation but also the operation's overall effectiveness.[50] Kees Boersma et al. (2016) highlighted that coordination appeared difficult because of the heterogeneity of the responding organizations on the one hand and the complexity of local governmental structures on the other.[51] At the same time, incoming responding organizations had to coordinate their actions and collaborate with other organizations and local communities to ensure accessibility and match aid to needs.[52] In many cases, where multiple agencies are involved in relief distribution, there is likely to be duplication of aid in some areas while other areas in need are not accessible. The literature highlights that it is essential that the coordination aims are communicated clearly in order for the mechanism to be effective. Kees Boersma et al. (2016) suggest regular communication can reduce the risk of coordination failure and limit unnecessary overheads, thus availing time and resources for humanitarian actors to invest in the most strategically useful coordination efforts.[53] The above studies highlight the importance of coordination mechanisms between local and international actors to overcome the challenges faced in responding to disasters.

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[49] The Nepalese Army, 'The Nepalese Army in the aftermath of the Gorkha earthquake of 2015 (Experiences and lessons learnt)', 2015, 42-43.

[50] Sharon Wiharta et al., 'The effectiveness of foreign military assets in natural disaster response', *Stockholm International Peace Research Institute* (2008): 41.

[51] F. Kees Boersma et al., 'Humanitarian response coordination and cooperation in Nepal. Coping with challenges and dilemmas', *VU Amsterdam: White Paper* (2016): 18.

[52] S. Rajaratnam School of International Studies (RSIS), 'World Humanitarian Day: Voices from the field', *RSIS Centre for NTS Studies*, 19 August 2015, 7, https://www.rsis.edu.sg/wp-content/uploads/2015/12/World-Humanitarian-Day-Voices-From-the-Field.pdf.

[53] F. Kees Boersma et al., 'Humanitarian response coordination and cooperation in Nepal. Coping with challenges and dilemmas', *VU Amsterdam: White Paper* (2016): 20.

Vulnerable groups in disaster response

When a disaster hits, marginalized and vulnerable groups have fewer and more fragile livelihood options, less capacity to influence the relief effort, and face more barriers accessing relief. The Government of Nepal's *Nepal Earthquake 2015 Post Disaster Needs Assessment* identified that the overwhelmingly majority of the affected population were from vulnerable and marginalized groups; 41 per cent of houses damaged belonged to Dalits (lower caste) and indigenous communities, 26 per cent to female-headed households, and 23 per cent to senior citizens. These marginalized and vulnerable groups were not engaged in local governance structures and decision-making bodies, nor engaged in the earthquake response by international responders.[54] There were also reports of discrimination in the distribution of relief in terms of caste and gender, as well as political favouritism and patronage regardless of what people actually needed.[55]

One of the significant challenges highlighted in the literature surveyed was the lack of representation of vulnerable groups in local government, which was compounded by the international humanitarian community's lack of proactive engagement with national and local organisations representing these vulnerable groups.[56] The Save the Children report highlights that every humanitarian response has to ensure that an assessment and analysis of the needs and vulnerabilities of different groups is carried out, and the response is targeted to address them and strengthen the capacities of the most vulnerable,[57] with greater attention given to urban areas.[58] In Nepal, Dalit communities are highly vulnerable and discriminated against in terms of where they can live and the services they can access, which excludes them from relief and rehabilitation efforts following natural disasters.[59] Caste-based discrimination has been observed in a number of forms, ranging from denial of access to public water taps and temples, to discrimination in government offices.[60] Therefore, Dalit communities are more vulnerable to natural and human-made disasters because of their marginal social standing, active discrimination, as well as living in highly vulnerable

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[54] Government of Nepal, 'Nepal Earthquake 2015: Post disaster needs assessment, Vol. A: Key findings', *National Planning Commission*, 2015, 62.https://www.worldbank.org/content/dam/Worldbank/document/SAR/nepal/PDNA%20Volume%20A%20Final.pdf

[55] Rebecca Barber, 'Did the humanitarian response to the Nepal earthquake ensure no one was left behind? A case study on the experience of marginalised groups in humanitarian action', *Save the Children* (March 2016) iii; Amnesty International, 'Nepal earthquake recovery must safeguard human rights', 2015, 10, https://www.amnestyusa.org/sites/default/files/p4583_report_-_nepal_report_on_earthquake_web.pdf_-_adobe_acrobat_pro_0.pdf.

[56] Rebecca Barber, 'Did the humanitarian response to the Nepal earthquake ensure no one was left behind? A case study on the experience of marginalised groups in humanitarian action', *Save the Children* (March 2016): 8.

[57] Ibid., 6.

[58] Amnesty International, 2015, 'Nepal earthquake recovery must safeguard human rights': 10-11. Available: https://www.amnestyusa.org/sites/default/files/p4583_report_-_nepal_report_on_earthquake_web.pdf_-_adobe_acrobat_pro_0.pdf.

[59] Assessment Capacities Project (ACAPS), 'Lessons learnt for Nepal earthquake response', 27 April 2015, http://www.acaps.org/special-report/lessons-learned-nepal-earthquake-response.

[60] UN-OCHA, 'Caste-based discrimination in Nepal: a local-level perspective from Dadeldhura District', *United Nations Resident Coordinator's Office*, Nepal, Issue 59: August 2013, http://un.org.np/sites/default/files/2013-08-16-field-bulletin-59.pdf.

and disaster prone spaces. These studies recommend that assessments should highlight vulnerable populations to ensure their needs are met.

Medical facilities challenges

When a disaster hits, recovery of medical facilities and restoring power to hospitals are common challenges faced by an affected country, and Nepal was no different. The Asia Development Bank (2015) reports that hospitals operated beyond capacity with many wounded left waiting, while many patients were treated in the open due to unstable hospital structures. Their study also underlines the importance of local people's involvement in disaster response as external support agencies have limited knowledge of local communities,[61] and cultural and local norms in healthcare delivery were another challenge faced by humanitarian agencies. A medical team deployed by the Israel Defence Force in the aftermath of the Nepal Earthquake recounted how culture played a vital role in delivering health care, particularly when to perform surgery and with end-of-life decisions, among others. It was therefore important to establish communication with patients and families to foster trust and mutual respect for effective medical treatment.[62] In the aftermath of disasters, international medical teams need to understand the local medical culture and work closely with physicians and nurses from the host country. Ofer Merin et al. (2015) suggest that outside medical teams should be competent to deliver effective services to racially, ethnically, and culturally diverse patient groups. They recommend that the necessary information for foreign medical teams can be provided by a country team's embassy in the affected country, and by using translators, such as medical students, who understand relevant medical terms.[63]

These studies underline the need to pay close attention to the recovery of medical facilities after a large-scale disaster. They also emphasise that local norms and communication with patients are important to carry out effective medical treatment. It is imperative to engage with national and local actors and pay close attention to vulnerable populations, especially in urban areas. The reports also identified logistical challenges and the importance of matching aid to needs. This research aims to further understand the gaps and challenges in the immediate disaster relief efforts in Nepal through field-based research.

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[61] Asian Development Bank (ADB), 'Response to Nepal's earthquake: Ten lessons from evaluations', *Independent Evaluation Department*, (Manila: ADB, 2015): 2, http://www.adb.org/sites/default/files/evaluation-document/158557/files/ll-nepal-earthquake.pdf.

[62] Ofer Merin, Avraham. Yitzhak and Tarif Bader, 'Medicine in a disaster Area: Lessons from the 2015 earthquake in Nepal', *JAMA Internal Medicine*, Vol. 175, No. 9 (2015): 1437–38.

[63] Ofer Merin, Avraham. Yitzhak and Tarif Bader, 'Medicine in a disaster Area: Lessons from the 2015 earthquake in Nepal', *JAMA Internal Medicine*, Vol. 175, No. 9 (2015): 1437–38.

Issues and Challenges in the 2015 Nepal Earthquake Response

One year on, the aftermath of the Nepal Earthquake remains visible to all as longer term rehabilitation and reconstruction efforts remain unfulfilled. In the immediate aftermath of the earthquake, the relief phase was extended by the Nepali government for an extra two months to September 2015 from the proposed timeline in the original flash appeal.[64] The World Food Programme (WFP), the lead agency for the Logistics Cluster, continued to wind down operations after one year (April 2016), and affected communities remain devastated by the destruction. It was in this context that humanitarian actors observed gaps and challenges in how the relief phase was governed and executed. The RSIS research team investigated the international response to the 2015 Nepal earthquake and how it was conducted through semi-structured interviews with international responders in Bangkok, Jakarta, and Singapore between February and March 2016. Interviews with local and international humanitarian agencies, non-governmental organisations, Nepali government officials, the Nepal Army, and community-based organisations in Nepal, as recipients of the international response, were conducted between March and April 2016.

This section aims to highlight some of the main challenges encountered in the immediate aftermath and international response phase so as to extrapolate observations and attempt a better understanding of how the Nepal Earthquake response could fit into the broader discourse of international humanitarian and disaster response. The issues and challenges faced by both communities and international responders fall into three broad categories: logistics; communication and coordination; and immediate response aid. In the following section, observations made by local and international responders on improving execution in the immediate disaster aftermath, and the implications of these experiences for the wider humanitarian community are highlighted.

Logistics

The landscape of Nepal includes a mountainous terrain coupled with underinvestment in infrastructure, which ensured that logistics was a major issue both in terms of access to Nepal and within the country. There were a number of factors that led to logistical challenges becoming

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[64] UN-OCHA, 'Nepal Earthquake: Flash Appeal Revision April–September 2015', news release, 11 June 2015, https://www.humanitarianresponse.info/en/system/files/documents/files/nepal_earthquake_2015_revised_flash_appeal_draft_a s_of_11june_10h.pdf

extremely significant. Nepal has only one international airport, Tribhuvan International Airport (TIA), which is situated in Kathmandu to serve the entire country. The airport became a major chokepoint despite the Nepali government's relatively quick call for international assistance within 3 hours of the disaster. Many international responders were only able to get into the country after 72 hours. To add to the difficulties, TIA is a relatively small airport with just one 3km runway and is only able to accommodate a maximum of 8 large aircrafts at any given point in time. This resulted in many international aircrafts destined for Nepal to be diverted to Delhi, Dhaka and Calcutta. The traffic and congestion meant many international response teams, equipment, and aid, spent many hours if not days waiting at various airports in the region before arriving in Nepal. The situation improved after a week, once air traffic control was in order and a system for quick off-loading of cargo was established on the ground.

However, logistical bottlenecks were not limited to the airport, but also extended to the transportation of relief items in and around Kathmandu. While most destruction and needs were located outside the Kathmandu valley area, the majority of international responders and relief aid was concentrated within the Kathmandu valley area and its immediate surroundings. While the management of international response was already a challenge, this increased as more relief aid was flown in. However, this was not just a management issue for the Nepali government. It became clear that much relief aid was unilateral, with airplanes full of relief goods arriving and off-loaded without any prior notice on what the items were, whether they were needed, and who was supposed to collect and distribute them. This further choked an already fragile and overstretched system.

The second major logistical issue faced by international responders was the terrain. Many were unaware and ill-prepared for the natural environment, in terms its topography and, in certain cases, the altitude. Since the epicentre of the earthquake and areas with largest impact were concentrated in the Himalayan mid-hills region (between 700m–4,000m above sea level), this proved problematic for many. As a result of the difficult terrain, there was inadequate physical infrastructure, such as roads in good condition, to access disaster-hit areas. On many occasions road connections suffered landslides induced by the earthquake which completely blocked access to affected communities making aid delivery extremely difficult. Until the major roads and highways were cleared of landslide debris, helicopters and small aircrafts were the only means of transporting relief items and reaching those affected. The limited number of such aircrafts also constrained aid delivery and distribution in the immediate aftermath. For many remote areas without pre-existing road access, the services of trekking and mountaineering porters as well as animals were used to transport relief goods, further affecting the amount of aid that could be distributed.

Communication and Coordination

Communication and coordination between humanitarian actors is frequently highlighted as one of the biggest issues in disaster response worldwide and Nepal was not an exception. However, significant advances in disaster communication and coordination have been made in recent years.[65] The UN and other humanitarian organisations developed protocols and mechanisms like the National Disaster Response Framework[66] and the United Nations Development Assistance Framework for Nepal.[67] Given that Nepal is one of the world's most disaster-prone and at-risk countries, the UN, under the auspices of UNDAC and OCHA, established a coordination system with the government of Nepal.[68] This system established a structure, and identified lead institutions such as the Ministry of Home Affairs, the National Disaster Centre, the National Emergency Operations Centre (NEOC) as well as the Multi-National Military Coordination Centre (MNMCC) which is operated and coordinated by the Nepal Army.[69] Many pre-disaster efforts and initiatives were activated in the aftermath of the 2015 Nepal Earthquake. While the overarching UN framework was successful as most responding parties were aware of where and whom to report to, there were instances of communication and coordination breakdowns. These particular communication and coordination challenges fall into seven categories (i) UN and other humanitarian organisations; (2) military and civilian government; (3) coordination between the Nepali government and foreign militaries; (4) Non-government organisations and national authorities; (5) Nepali government and international responders; (6) aid donors and aid recipients; and (7) local and foreign media.

Firstly, while UN agencies coordinated around the UN cluster system there was reportedly minimal contact and coordination with other organisations in terms of aid delivery and distribution.[70] Other than working together with the WFP and the Logistics Cluster to assist with the storage and movement of aid and relief materials, many other humanitarian organisations worked alone. This

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[65] John R. Harrald, 'Agility and discipline: critical success factors for disaster response', *The annals of the American Academy of Political and Social Science*, vol. 604, no. 1 (2006): 256-272; Dave Yates and Scott Paquette, 'Emergency knowledge management and social media technologies: A case study of the 2010 Haitian earthquake', *International journal of information management*, vol. 31, no. 1 (2011): 6-13; Louise K. Comfort, 'Crisis management in hindsight: Cognition, communication, coordination, and control', *Public Administration Review* 67.s1 (2007): 189-197.
[66] Ministry of Home Affairs, *Nepal Disaster Response Framework*, (Kathmandu: Government of Nepal 2013), http://un.org.np/reports/national-disaster-response-framework (last accessed 1 August 2016).
[67] UN, *United Nations Development Assistance Framework for Nepal 2013-2017*, (New York: United Nations 2013). http://un.org.np/reports/undaf-2013-2017 (last accessed 1 August 2016).
[68] Interview with official from UN-OCHA, Bangkok, 12 March 2016; and 'Nepal: Country Profile', UN-OCHA, http://www.unocha.org/asia-and-pacific/country-profiles/nepal (last accessed on 26 July 2016).
[69] For more information please refer to: 'Nepal Centre for Disaster Management', Government of Nepal, http://www.unocha.org/asia-and-pacific/country-profiles/nepal; 'National Emergency Operation Centre', Government of Nepal, http://neoc.gov.np/en/; 'Nepal Army's Operation Sankat Mochan', Nepal Army, http://www.nepalarmy.mil.np/sankatmochan/index.php (all web addresses last accessed on 26 July 2016).
[70] Interviews with official from Nepal Red Cross Society, Kathmandu, 28 March 2016; official from Singapore Red Cross Society, Singapore, 6 April 2016; and Mr Ravindra Shakya, Country Director for Restless Development and Treasurer for Association of International NGOs in Nepal (AIN), Kathmandu, 30 March 2016.

was particularly notable with smaller NGOs which operated outside of the UN cluster system because there was limited awareness of the system or, in some cases, they actively opted to operate outside the system.[71] Secondly, parallel disaster response structures were created between the military and the civilian government, and as a result challenges emerged over mandate and jurisdiction. While air traffic control is covered by the Civil Aviation Authority of Nepal (CAAN), a parallel structure emerged from the military side. Miscommunication between the two reportedly led to a few near mid-air collisions and mishaps in Nepali air space.[72] It was not established whose instructions pilots and aircraft operators should be following, especially when instructions conflicted.

Thirdly, coordination between the Nepali authorities and responding foreign military teams emerged as an issue in the first week of the international disaster response. There were reported instances where all contact was lost with some foreign military teams and local authorities were unable to track their whereabouts. This led to some concern and apprehension for the Government of Nepal, until the authorities finally decided to allocate certain parts of the territory to specific international military teams. Similar to parallel coordination and communication structures for militaries and all other international responding agencies and organisations, there was also equipment and hardware which belonged to and were operated by different groups. While some of the aircrafts were shared, certain military machinery like forklifts, debris clearance tools, and some vehicles were strictly off limits for other organisations or the human resources to operate them were unavailable.[73] There were no mechanisms or guidelines in place for sharing such equipment among the various international responding parties during this period.

Fourthly, a common issue raised was the unclear and inaccurate information from affected areas.[74] News and reports from the government, media, and other organisations often conflicted and made it difficult to identify and assess challenges, particularly for humanitarian staff on the ground and those coordinating the response from outside the country. Remote management of disaster relief operations, especially with the advent and reach of digital and information technologies, has already been flagged as an emerging problem surrounding humanitarian responses.[75] The Nepal experience further highlighted the inaccuracy of information that such remote management depends upon. In addition to the conflicting needs assessment information, there were significant gaps in sharing

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[71] Interviews with Mr Ravindra Shakya, Country Director for Restless Development and Treasurer for Association of International NGOs in Nepal (AIN), Kathmandu, 30 March 2016; and official and responder to Nepal from Medicin Sans Frontier (MSF), Jakarta, 12 April 2016.
[72] Interview with UN-OCHA official, Bangkok, 12 March 2016.
[73] Interview with responder from private multinational logistics company, Singapore, 15 April 2016.
[74] Interviews with Johann Annuar, Founder of Humanity Assist, Singapore, 22 March 2016; Official and responder to Nepal from Medicin Sans Frontier (MSF), Jakarta, 12 April 2016; Officials and responders of Singapore Civil Defence Force (SCDF), Singapore, 22 April 2016; Responders from private multinational logistics company, Singapore, 15 April 2016; Official and responder from Mercy Relief, Singapore, 23 March 2016.
[75] Mark Duffield, 'The resilience of the ruins: towards a critique of digital humanitarianism', *Resilience* (2016): 1-19.

official information and directives from the Nepali authorities.[76] In particular, changes in customs rules for aid materials or the use of UAVs were quick to be implemented but slow to be communicated to humanitarian agencies. This is also an issue which has been raised in numerous past disasters.[77] Many international responders also mentioned how such changes significantly affected their ability to plan and strategise relief delivery. Without proper and effective communication and coordination, there were some regions or disaster-affected areas which had multiple response teams while other areas had none. This thus resulted in duplication of effort in some areas with communities receiving more attention while others were left wanting.[78] Another commonly cited issue was insufficient coordination or communication in aid delivery. Oftentimes goods were off-loaded at the airport without any information or instructions as to what the goods were or who was in charge of collection. This added pressure to an already clogged airport with many goods and items discarded to a corner of the airport complex.

As is common in a major disaster, the international media reported from Nepal in the aftermath of the earthquake. As there were no clear guidelines on how the media should operate, members of the media moved about the disaster-affected areas without any coordination. Several instances of intrusion and disrespect to local communities by media were reported.[79] This perceived insensitivity by foreign media on the ground led to much criticism within the country. Social media campaigns were launched to generate more awareness about what was perceived as irresponsible journalism with calls for some foreign media to leave the country.[80] The Nepal experience showed deficiencies in strategic planning both by international responders and those based in Nepal. With the reflections and experiences highlighted above in mind, the management and coordination of international response have the potential to be significantly improved in future scenarios.

Immediate Response Aid

The international response to the Nepal Earthquake brought significant amounts of money, relief items, equipment, and professional expertise, which was critical to save lives and minimise suffering. However some relief was unsuitable and did not match the needs and situation on the ground,

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[76] Interviews with Johann Annuar, Founder of Humanity Assist, Singapore, 22 March 2016 ; Official and responder to Nepal from Medicins Sans Frontier (MSF), Jakarta, 12 April 2016; and Mr Ravindra Shakya, Country Director for Restless Development and Treasurer for Association of International NGOs in Nepal (AIN), Kathmandu, 30 March 2016.

[77] David Fisher, 'Domestic Regulation of International Humanitarian Relief in Disasters and Armed Conflict: A Comparative Analysis', *International Review of the Red Cross*, vol. 89, issue 866 (2006): 345–72.

[78] Interviews with senior official, Ministry of Home Affairs and NEOC, Government of Nepal, Kathmandu, 29 March 2016; Official and responder from Mercy Relief, Singapore, 23 March 2016; and Official and responder to Nepal from Medicins Sans Frontier (MSF), Jakarta, 12 April 2016.

[79] Southik Biswas, 'Why is Indian media facing backlash in Nepal?', *BBC*, 4 May 2015.

[80] 'Go home Indian media, Nepal Twitterati says', *The Times of India,* 4 May 2015.

particularly clothing, equipment and machinery brought in for the immediate rescue phase.[81] As with most humanitarian responses the usual relief items were delivered to Nepal; this included food, water, shelter, blankets, clothes and hygiene (WASH) goods. There were obvious and important factors which were unfortunately overlooked. As Nepal had just completed its second harvest in late March – early April, basic foods were locally available with many households in rural areas having sufficient household food stocks. Thus food, though needed and useful, was not necessary to the extent that it had been prioritised.[82]

There were also some obvious sensitivities concerning food which were overlooked, for example some food aid included meat or its derivatives which also contained beef.[83] Nepal is a predominantly Hindu-Buddhist country where eating beef is considered taboo. This therefore led to a trust deficit and created avoidable food waste. Lastly, it was also found that some packaged relief food items had passed their shelf life and expiry dates.[84] Similar issues also surrounded medicine and medical items. Beyond expired items, shipments of medicine and medical items were received with labels or instructions in languages other than English.[85] This became problematic during use and distribution, especially when the medical teams were unable to understand the particular language or instructions which resulted in medicine waste. As April marks the beginning of summer in Nepal, conditions were particularly hot and dry during the emergency relief phase thus there was relatively little need for the blankets and warm clothing that had been sent.[86] Furthermore, people in Nepal generally do not accept and use second hand clothing, so most donated clothes were of little use or only marginally accepted by the affected communities and populations.[87]

While there were cases of unneeded or unwanted relief items, the demand for tents and tarpaulin sheets overwhelmingly outstripped supply. Once this was realised, many responding agencies prioritised shelter, but over time, as many shifted their focus towards meeting shelter needs, it meant other relief goods like WASH items were completely ignored.[88] This too led to a mismatch and imbalance of relief and response. There was also a mismatch in the types of equipment and machinery which was brought for disaster response. A number of foreign military teams and organisations brought in the latest, state-of-the-art equipment for high-rise urban rescue.[89]

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[81] Interviews with officer of Nepal Army who also served as a liaison officer to various foreign international military teams, Kathmandu, 28 March 2016; senior official, Ministry of Foreign Affairs, Government of Nepal, Kathmandu, 31 March 2016.
[82] Interview with international responder for WFP Logistics Cluster, Kathmandu, 1 April 2016.
[83] Interview with senior official, Ministry of Foreign Affairs, Government of Nepal, Kathmandu, 31 March 2016.
[84] 'Relief food found to be contaminated', *The Kathmandu Post*, 9 May 2015; Lim Yi Han, 'Some Singaporeans donated items 'of no use' to Nepal quake survivors', *The Straits Times*, 6 May 2015..
[85] Interview with senior official, Ministry of Health and HEOC, Government of Nepal, Kathmandu, 31 March 2016.
[86] Interview with international responder for WFP Logistics Cluster, Kathmandu, 1 April 2016.
[87] Interview with senior official, Ministry of Foreign Affairs, Government of Nepal, Kathmandu, 31 March 2016.
[88] Interview with international responder for WFP Logistics Cluster, Kathmandu, 1 April 2016.
[89] Interview with Officer of Nepal Army who also served as a liaison officer to various foreign international military teams, Kathmandu, 28 March 2016.

Kathmandu was the only major urban centre affected by the earthquake with the majority of the damage in rural regions where most homes are made from mud, stone and brick, which meant most of this equipment ended up redundant.[90] In addition, there was equipment sent by donors that no one in the country knew how to operate. This then also became more of a burden than help.[91] Some transport vehicles, such as large propeller helicopters, could have been useful, but were not suitable for the terrain and local conditions.[92]

While it is necessary to have pre-existing disaster plans and exercises, the post-disaster reality is that these do not necessarily materialise into action in the form of a response mechanism, identification of key institutions, contact points/persons, and SOPs. There were numerous instances where the coordination role was taken up by ad-hoc groups and actors rather than pre-designated mandated agencies. In Nepal, this was most notably highlighted by the central role the military played in relief coordination.[93] However it was acknowledged that participation in international exercises and relationship building prior to the disaster was instrumental in the response as many responders were familiar with structures and the existing political, social, and humanitarian landscape of the country. Likewise international responders were also aware of the UN agencies, other foreign militaries and other humanitarian organisations likely to respond to the earthquake. This thus reinforced the need to have disaster plans and engage in exercise even though plans may not work as previously anticipated. Another key success reported was the existence of the newly established Humanitarian Staging Area within the premises of the Tribhuvan International Airport.[94] Its establishment significantly assisted in the organisation of the logistics and surge of international aid and relief into the country. Establishing such spaces in disaster prone areas and countries is now seen as extremely important as can be seen with the WFP development of staging areas in western Nepal, where another potential disaster is expected.[95] Similar staging areas are also now being established and operated in Djibouti[96] to serve disasters in the Horn of Africa, and in Kyrgyzstan[97] for Central Asia.

The logistical challenges faced in Nepal highlighted the need for back-up scenario planning for an international disaster response. It was fortunate that the solitary runway at TIA, the only air strip able to accommodate large aircrafts in the country, remained intact after the earthquake. In the absence of the runway at TIA, the international response would most likely have been operated

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[90] Interview with senior official, Ministry of Home Affairs and NEOC, Government of Nepal, Kathmandu, 29 March 2016.

[91] Interviews with international responders for WFP Logistics Cluster, Kathmandu, 1 April 2016.

[92] Ibid, and interview with senior official from Nepal Red Cross Society, Kathmandu, 28 March 2016.

[93] Interview with UN-OCHA official, Bangkok, 12 March 2016.

[94] 'Nepal opens first humanitarian staging area, built with government and UK aid support', *WFP News*, 27 March 2015. http://www.wfp.org/news/news-release/nepal-opens-first-humanitarian-staging-area-built-government-uk-aid-support

[95] Interview with official and responder from WFP Logistics Cluster, Kathmandu, 30 March 2016.

[96] Leighla Bowers, 'Yemen: How is WFP supporting the humanitarian community', *WFP News*, 21 May 2015.

[97] Abeer Etefa, 'Kyrgyzstan operation gathers speed', *WFP News*, 23 June 2010.

through cities in India (like Calcutta and Delhi) or China (Lhasa) offering the closest international airports for aid to be delivered overland. This would reduce the time taken to reach communities and for the delivery of immediate relief, and reasserts the importance of neighbouring countries in disaster relief. This is not only due to geographical proximity but also their familiarity with the social, political and economic situation of the country in need. In the case of Nepal, the first countries to come to its aid were India, China, Bangladesh, and Sri Lanka; with some of the first response teams from India and Bangladesh delivering assistance to affected communities within the first six hours.[98]

The Nepal experience also revealed that uniformed groups (military, police, or civil defence forces) are often most effective in the initial stage of the response. This is due to their organisation, established command structure, and mobilisation preparedness; all of which applies to both domestic and international forces. However, there does need to be clear protocols and procedures on how disaster management responsibilities are eventually and ultimately handed over to civilian authorities. As was experienced in Nepal, this is important for aligning priorities and mandates, which was highlighted by the confusion over air space control and management. For international responders, one of the most critical and important factors which determined the effective and timely response in the case of Nepal was the position of the resident coordinator. It was observed that teams with a resident country coordinator significantly helped pave the way for that agency to start their work as soon as possible. The lesson for international response teams is thus to either have an equivalent of a resident coordinator or ensure early identification of a local partner. Foreign teams that arrived without prior arrangements in place or without a local partner, often led to additional confusion and mismanagement of time and resources.[99] Indeed, one consistent response during interviews was that "unlikely responders" had an important role in the immediate response and proved to be extremely important and critical. This included the private sector, business clubs, professional associations, volunteer youth groups, and even religious orders.[100] The local Rotary clubs[101] and Buddhist monasteries[102] were extremely resourceful in understanding the local community, identifying needs and victims, and negotiating access to them. Taking the effort to understand, identify and establish collaborations with such groups could prove extremely useful for responders in the future.

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[98] Interview with officer of Nepal Army, Kathmandu, 28 March 2016.
[99] Interviews with senior official, Ministry of Home Affairs and NEOC, Government of Nepal, Kathmandu, 29 March 2016; Official and responder from Mercy Relief, Singapore, 23 March 2016; Mr Ravindra Shakya, Country Director for Restless Development and Treasurer for Association of International NGOs in Nepal (AIN), Kathmandu, 30 March 2016; and official from the Ministry of Health, Government of Nepal, Kathmandu, 31 March 2016.
[100] Interviews with Mr. Sunil Thapa, member of Parliament and former Commerce and Supply Minister, Government of Nepal, Kathmandu, 1 April 2016; Senior officer, Nepal Army, Kathmandu, 31 March 2016; official from Nepal Red Cross Society, Kathmandu, 28 March 2016.
[101] Interview with official and responder from Mercy Relief, Singapore, 23 March 2016.
[102] Ibid.

Some important lessons were also learnt from the perspective of Nepal as a disaster affected country. Rather than making an open call for international help, authorities in Nepal felt they should have set certain conditions or criteria and provided prioritisation. An example of useful conditions or criteria include a public announcement that all international response teams should (i) be fully self-sufficient (ii) have a resident coordinator or local partner before coming into the country (iii) have their own translator; and (iv) bring aid and relief that was greater than a minimum stipulated amount.[103] As a result of the earthquake disaster experience, the administration of Nepal learnt the need and importance of better monitoring of international response teams and the relief items. This would ensure that teams or responders do not go missing and also avoid duplication of effort. Furthermore, a system of registry or notification of relief items prior to delivery and shipment and only upon the approval of authorities would ensure the right aid arrives as identified in the needs assessment. The notification system could also operate as a portal to communicate the latest government rules and regulations. This would establish a mechanism to identify appropriate items and better utilise machinery and equipment. It would further enable strategic aid distribution and reduce traffic congestion which was a major challenge in Nepal.

From an operational perspective, the humanitarian response to Nepal identified the need for a unified operations room (Ops Room), which is a physical location where all humanitarian organisations, international response teams, foreign military teams and others could gather for a comprehensive overview of all operations and relief work. Such a provision can collate and disseminate the most up-to-date information, allow for collaboration if needed, and ensure that duplication is minimised. Finally, the relief effort also identified the need for a standardised SOP or broad guidelines on operational language, signal systems as well as selection and aid distribution criteria to take into account the social, economic and political realities of the affected area. This could prove useful and minimise the time required for all parties to conduct their own assessments and procedures. For example, the UN prioritised all Nepali employees stationed worldwide to be part of their response teams for the first time. In the post response assessment this was seen as a success and yielded positive results. It is now therefore likely that the UN will continue to adopt such prioritisation of nationals of affected countries in future responses.

Implications for Humanitarian Assistance and Disaster Relief

The humanitarian response to the Nepal Earthquake is now another chapter in the international

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[103] Interviews with senior official, Ministry of Home Affairs and NEOC, Government of Nepal, Kathmandu, 29 March 2016; senior official, Ministry of Foreign Affairs, Government of Nepal, Kathmandu, 31 March 2016.

effort to assist a country in need of critical support and help. This experience was deemed broadly successful with a number of elements cited as being especially useful: progress through the international community's better preparedness for response; the evolution of UN-led coordination which had put in place overarching command and coordination structures; and the establishment of a humanitarian staging area. It also revealed that some broader issues and problems still remained. Firstly, it is important to understand the core mandate of humanitarian and disaster response and how to assess vulnerability. It became clear that organisations and parties (e.g. militaries and uniformed groups) have different views on the goal and timeframe of engagement. For some, disaster response is a short-term humanitarian engagement which prioritises physical vulnerability, while those who take a longer term perspective often incorporate a broader development agenda more focused on social vulnerability. These are not necessarily mutually exclusive but it does create parallel structures and was recognised as an area in need of improvement at the World Humanitarian Summit in 2016.

The Nepal experience also revealed that there is no consensus on a consolidated system for disaster management and humanitarian response. While great effort and progress has been made by the UN in particular towards mainstreaming their cluster system, many responding organisations and teams operated outside of it, and to a large extent, independently of one another. Although there was some coordination between the cluster system and parties working outside of it in the case of Nepal, how the international humanitarian field will continue to negotiate and accommodate mandates, aims, and agendas will continue to shape the future humanitarian landscape. On the larger challenge of the most appropriate and effective response and relief aid, Nepal was an important test field for a number of international humanitarian organisations. For example, the International Federation of Red Cross and Red Crescent Societies (IFRC) for the first time implemented direct cash transfers to the affected community rather than provide emergency goods and supplies. For the most part this was deemed a success and likely to be considered in future responses.

The collective international effort in the aftermath of the Nepal earthquake proved to be one of the biggest humanitarian and disaster responses in 2015. While largely deemed a success by most responders as well as the government and beneficiaries in Nepal, there were numerous lessons for responding parties and the disaster affected country. These vary from institutional to sector specific lessons to those relevant to the much broader field of humanitarian affairs and disaster management. These lessons can already be seen in emerging literature as well as from the results of this study, conducted approximately one year after the earthquake. It is likely that insights and lessons will continue to emerge, especially since rehabilitation and reconstruction phases are still on-

going in Nepal. Future research should continue to examine potential lessons along the lines taken in this study; incorporating both response and aid contributors as well as recipients. Thorough analyses and attention to the interaction between international responders and local communities is also likely to add value to the field and help to broaden understanding of the existing humanitarian system, its benefits, and where there is still room for improvement.

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