THE 2015 NEPAL EARTHQUAKE: IMPLICATIONS FOR FUTURE INTERNATIONAL RELIEF EFFORTS

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INTRODUCTION

A 7.8 magnitude earthquake struck central Nepal at midday on 25th April 2015 with the epicentre around the Barpak, Gorkha district. Given the relatively shallow hypocentre at the depth of just 8.2km, tremors were felt across the South Asian subcontinent including parts of Tibet and China in the north.[1] The majority of the loss and damages were however concentrated in Nepal. A year on, aftershocks still continue, now numbering more than 450, which are measured more than 4 on the Richter scale.[2]

The powerful tremor and resulting 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. It is also estimated that the disaster has left over 60,000 people displaced and resulted in economic losses of over US$ 9 billion.[3]

The UN Staging Area is located next to Kathmandu Airport and provided a critical logistics hub during the emergency response phase. Credit: Maxim Shrestha/ RSIS

There was an overwhelming international response to the disaster, with many countries and humanitarian agencies rapidly responding to the situation. The response included immediate search and rescue personnel and support, medical teams and support, emergency relief items, as well as goods and services geared for the recovery and rehabilitation phases. Much of the international support also came in the form of assets, from aircrafts to deliver aid, to other equipment and machinery to help in the post disaster relief effort.

The emergency disaster response phase officially lasted until 17 May 2015, when the United Nations Disaster Assessment and Coordination (UNDAC) was demobilised.[4] Many of the foreign militaries also finished their missions and returned home around the same time.[5] Humanitarian and relief agencies whose mandates and expertise go beyond the search and rescue and immediate relief phases into the recovery phase, continue to work in Nepal until the time of writing.

This brief aims to provide a general overview of the international response in the immediate aftermath of the disaster, focusing primarily on the search and rescue and immediate relief phase. It also hopes to highlight observations and recommendations, which have emerged from field interviews conducted with both international responders as well as the beneficiaries of the international effort in Nepal. Altogether, this brief will highlight broad trends and field observations from the Nepal experience to inform stakeholders of similar international missions in the future.

1 'M7.8 - 36km E of Khudi, Nepal', USGS, accessed 20 April 2016, http://earthquake.usgs.gov/earthquakes/eventpage/us20002926#general

2 National Seismological Centre (Nepal), accessed 20 April 2016, http://www.seismonepal.gov.np/index.php

3 '25 April 2015 Gorkha Earthquake Disaster Risk Reduction Situation Report', UNISDR, accessed 20 April 2016, http://www.unisdr.org/files/44592_gorkhaearthquakedisasterriskreducti.pdf

4 Interview with UNOCHA official, 18 March 2016.

5 'U.S. Military prepares to leave Nepal at end of relief mission,' *Today*, 20 May 2015.

INTERNATIONAL RESPONSE TO THE EARTHQUAKE

Within 3-4 hours of the earthquake, the Nepali government issued a request for international assistance. Altogether 34 countries responded, which 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 the setting up of 2 field hospitals; and a total of 18 foreign military teams. The foreign military teams comprised engineers, air support personnel, medical professionals, and search and rescue experts.[6]

India was the first international team to respond with the first teams arriving within the first 12 hours. This was followed by teams from China, Sri Lanka, Bangladesh and Bhutan, given their geographical proximity to Nepal. Teams from 14 countries (a total of 1966 personnel) arrived in Nepal within the first 72 hours, with the remaining arriving within the first week.[7] In terms of foreign assets the most important and critical were foreign military air assets. The biggest challenge faced in the aftermath of the earthquake was in terms of access to various affected regions and often these were only accessible by air.[8] 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 relief operations.[9] In the first month after the earthquake, the World Food Programme (WFP) as head of the Logistics Cluster under the United Nations framework for global humanitarian response, handled 3,100 metric tonnes of relief goods.[10] This does not account for the aid which came through bilateral and other humanitarian channels which the UN was not directly involved in or coordinated. Relief items and goods included shelter, medical supplies, food, water, sanitary and hygiene goods.

Major foreign donors to Nepal also pledged US$4.4

UK firefighters helping to re-open earthquake-hit hospital in Kathmandu, Nepal. Credit: UK Department for International Development via Flickr Creative Commons

billion in aid mostly aimed at the major reconstruction efforts required after the earthquake.[11] Of this total US$2.2 billion was offered to Nepal in terms of loans and the remaining US$2.2 billion as grants. The largest pledge came from India which promised US$ 1billion, followed by China's RMB 3 billion (US$ 483 million).[12]

From Southeast Asia, seven out of the ten ASEAN member states including Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam responded in a variety of ways, from volunteers to donations, relief workers, experts or supplies. Ranked in terms of number of personnel from foreign countries in the Nepal response, 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. In all, there were 406 ASEAN people on-site as part of official government representative teams, not including those who responded on an individual or NGO basis in the immediate post-earthquake response.[13]

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

7 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).

8 Interview with Officer of Nepal Army, 28 March 2016.

9 '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

10 'Nepal – Earthquake Response One month on', WFP Logistics Cluster, accessed 20 April 2016, http://www.logcluster.org/blog/nepal-operation-overview-infographic

11 '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

12 Ibid.

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

FIELD OBSERVATIONS AND POLICY RECOMMENDATIONS

As part of the Humanitarian Assistance and Disaster Response (HADR) programme, the NTS Centre at the S. Rajaratnam School of International Studies (RSIS), a team of researchers studied the international response to the 2015 Nepal earthquake with the aim of understanding the dimension and scope of the international response and to distil some field observations that can better inform policy-makers in the future. The four categories include (i) Strategic Planning; (ii) Aid Delivery; (iii) Aid Provision; and (iv) Aid Distribution.

Strategic Planning

This section highlights a collection of salient recommendations for disaster preparedness observed through interviews with key stakeholders based both in Nepal and internationally. Through an in-depth assessment of responders' reflections, this section seeks to identify key elements to consider in preparation for future humanitarian assistance and disaster relief response. Through the fieldwork it was observed that one of the most important ingredients to a more effective humanitarian response is the depth and breadth invested in vulnerability assessment to ensure that the response is both timely and appropriate in terms of need.

Attention to trust building between stakeholders during non-emergencies in the longer term is possibly the key ingredient to effective international HADR response.

There is significant value in organising and participating in international exercises on disaster preparedness and response for both countries at high potential risk of natural disaster and those in a position to offer humanitarian assistance and disaster relief. There are two important benefits which can come out of such engagements. Firstly, operational exercises assist in the early identification of potential response bottlenecks in the supply of relief goods and aid (including institutional capacity, human resources, and delivery mechanisms). Secondly, operational exercises strongly help to identify key inter-personal relationships, particularly the identification of potential local partners or a resident coordinator with whom to work with in time of disaster. Ultimately it is through a sustainable approach to vulnerability

assessment and identification of stakeholders that a more effective response can be shaped.

Craft context specific guidelines and Standard Operating Procedures (SOPs) between responders and humanitarian assistance and disaster relief recipients to raise awareness of national and local regulatory frameworks.

SOPs should cover a number of aspects from relief prioritisation to distributional procedures and operational matters. Firstly, the quality and type of aid should be prioritised from the expiration dates of medicine and food, to an assessment of cash donations to purchase local goods versus the distribution of goods sourced abroad. Secondly, distributional procedures such as who to prioritise, how to prioritise, and what is the next best calibration of relief assistance to minimise hurdles on the field and, in turn, the wastage of effort and aid is an important assessment. Context specific guidelines and SOPs should also be prepared on operational matters in terms of planning for loss of personnel and/or assets during rescue operations; how to respond should all infrastructure facilities within the disaster zone or country be completely destroyed and should operations from a third country be necessary; and SOPs for rejected relief items to be appropriately withdrawn.

In large scale disasters, governments seeking international assistance should set certain criteria in an effort to better manage the HADR response. These criteria could include the need to supply responders with translators, ensure response team self-sufficiency in terms of food and accommodation, and the identification of a local partner or organisation. It therefore makes for greater efficiency to internalise such issues as SOPs through periodic assessment of vulnerable countries.

Increase awareness of UN and other key global and local institutions and processes.

More often than not, working with other international responders becomes necessary in the field. However, the lack of coordination between civilian and military structures was a consistent emergent theme during the course of the fieldwork. It is therefore pertinent for stakeholders to invest in familiarisation with

other key HADR players. Through an assessment of the various organisations from the United Nations to local entities like professional networks, social and business clubs, it is important to be familiar with their procedures, strengths, protocols and structures which can facilitate greater cooperation during periods of disaster. Some institutions may already have important and vital information including needs assessments and knowledge on the availability of goods and services in the local economy. In addition, these stakeholders can offer local awareness of who is involved in what type of search and rescue, relief initiatives, and reliable information sources.

Further, on the issue of responders with varied motivations, it is important to recognise the different operational languages in use and invest in the development of cross-sector (military, civilian government, INGO, or private sector) awareness of terminology. This can clarify ambiguity over levels of priority, strategy or operations.

Prioritise human resources and assets

The prioritisation of staff of Nepali origin in its response to the earthquake was a commitment by the United Nations that was deemed highly successful. However, some of the relief materials supplied by the international community did not meet local needs or duplicated effort. It is therefore important to assess assets to match the physical and infrastructure realities in the recipient country. Further, it is also important to incorporate and anticipate modifications to the strategic plan to ensure flexibility for different HADR settings in one recipient country.

Sensitivity training for rescue and relief responders, and volunteers involved in fundraising and donation drives at home, is necessary.

The fieldwork identified several areas in need of sensitivity training. First, the social, political, economic and humanitarian dimensions and environment in the affected country should be known to the responders. Secondly, the cultural values and norms in terms of medicine, end of life customs/ beliefs/norms should be appreciated. Thirdly, greater awareness of legal medical issues and practices (e.g. protocols on consent for medical procedures) should be observed. Fourthly, an understanding of the geography, topography, and climate of the affected area, including seasonal conditions and local cropping calendars should be integrated into strategic planning. Fifthly, international responders should recognise appropriate emergency Trauma Protocols and body identification processes and procedures. Through the development of robust sensitivity training, international responders would be better placed to match aid and assets with local needs.

Institutionalise transparency and accountability

Involvement, communication, and cooperation between the responder and aid recipient can lead to a much better response. It would also ensure greater transparency and accountability to both stakeholders in the country of disaster as well as to those in the responding country who donate and provide aid. Transparency should therefore be ensured before and during the delivery of aid, during the provision of aid (what is being provided, how much is being brought in, intended for whom), as well as during aid delivery (who received what, how much of it was actually distributed, what happened to the remainder, if any). Transparency should be extended to all in the humanitarian community.

UKISAR team in Chautara, Sindhupalchok District – north east of Kathmandu, Nepal. Credit: Jessica Lea/DFID via Flickr Creative Commons

Aid Delivery

Aid delivery is one of the less controversial functions of military engagement through the use of military assets, coupled with the delivery of a few tonnes of aid in a single military cargo flight on the lower end of operational complexity.[14] While the use of both military and civilian aircraft to deliver aid is utilised, challenges remain. This section will focus on two key recommendations the Nepal earthquake experience highlighted: the importance of establishing effective communication channels with affected authorities prior to aid delivery, and the utility of developing an aid registration system.

Establish communication with authorities of affected countries prior to the transportation and delivery of aid

Communication with relevant authorities on what type and kind of goods are going to be delivered is necessary. This ensures that aid delivery is a communicated and negotiated two-way process. This can ensure that wrong or unnecessary goods and aid are not transported; and that duplication is limited. Aid delivery can become problematic when it is carried out unilaterally, without consultation or communication. Well established communication with local agencies also minimises potential delays or temporary diversions.

Develop an aid registry system to track both physical and virtual aid available

In donor countries, a useful tool or process is the use of a registry system which notes the availability of stocked and pledged relief goods and items. These items should be deployed once in line with the needs assessment in consultation with local stakeholders. This can assist in minimising wastage and limit supply chain disruption.

Emergency shelter for earthquake survivor in Sankhu, Nepal. Credit: USAID DART via Flickr Creative Commons

Aid Provision

Aid provision covers the immediate surge capacity of international response and the ability of that effort to have the equipment and personnel rapidly deployable. This section details three major policy-relevant findings which include the development of inclusive response teams; ensure the relief priorities are calibrated as best as possible in the time available; and to effectively monitor the affected country's policies as these are likely to change quickly in a crisis situation.

Specialist search and rescue equipment arrives in Kathmandu, Nepal. Credit: UK Department for International Development via Flickr Creative Commons

Develop inclusive response teams

Dynamic and multifaceted response teams prove to be more effective on the ground in terms of professional expertise and experience, drawing representation from civilian government, military, media, as well as across society, particularly including women trained in dealing with SAR and aid provision in both urban and rural settings.

Calibrate relief priorities

While most international response is often focused on providing SAR and medical services, other aspects are left without attention. This may be in terms of immediate restoration of power and internet for better communications, clearing of or opening up supply chains and routes for aid delivery and provision, or the creation of a safe space for children and other vulnerable members of society. These have proven to be extremely vital in post disaster settings, although often overlooked or considered secondary. Through a calibrated approach, international responders could develop niche response capabilities for disaster settings to ensure comprehensive coverage of needs in disaster settings.

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14   Jeffrey Engstrom, Taking Disaster Seriously: East Asian Military Involvement in International Disaster Relief Operations and the Implications for Force Projection, Asian Security, Volume 9, Issue 1, 2013.

Monitor affected government policy developments

Aid provision can last for extended periods of time. However rules and procedures concerning humanitarian assistance and disaster relief can be in flux. It thus becomes necessary to track the evolving humanitarian landscape, particularly of domestic regulations. This ensures aid providers and goods do not fall foul of regulations and imposed bureaucratic procedures.

The Canadian Red Cross ERU unloading in Kathmandu en route to Dhunche, Nepal. Credit: GAC/AMC via Flickr Creative Commons

The Consortium of Non-Traditional Security Studies in Asia was re-launched in February 2016. The NTS Centre at RSIS leads and coordinates this Consortium. The aims of the consortium are as follows:

- To develop a platform for networking and intellectual exchange between regional NTS scholars and analysts

- To build long-term and sustainable regional capacity for research on NTS issues

- To mainstream and advance the field of non-traditional security studies in Asia

- To collate and manage a regional database of NTS publications and other resources

For more information on the consortium, please visit the NTS-Asia website: www.rsis-ntsasia.org/

Aid Distribution

Aid distribution involves a number of aspects that directly relate to proficiencies necessary for complex operations. These operations involve the allocation of crucial relief materials or the ability to transport aid workers over a broad geographical area. These relief operations usually involve multiple partners working together and often last a number of weeks or months.[15] As a result, it is an area of humanitarian assistance and disaster relief that requires more time and effort to ensure an effective response. Through our field interviews, we identified three broad policy-relevant considerations: the need to calibrate UN prioritisation; increase awareness of local networks in the affected country; and to assess direct cash distribution to increase response effectiveness.

Calibrate UN Prioritisation

Aid response often tends to be overwhelmingly focused on top line items. While the UN aid prioritisation system offers an important ranking, it led to top line items receiving an overwhelming response while lower priority items such as Water, Sanitation and Hygiene (WASH) or education were left far behind in terms of aid distribution in the case of Nepal. Thinking of aid distribution in a calibrated manner to ensure some balance can thus be useful and necessary.

Increase awareness of local networks and organisations in affected country

Community groups with a work history and experience in the affected area will fair far better and more effectively in aid distribution than an inexperienced international actor. As such it is useful for international responders to establish contact and exchange information with national and international NGO networks and contact persons, humanitarian agencies with a local presence and local chapters (like the Red Cross, MSF, Oxfam, Save the Children), other non-NGO networks like the Rotary/Lions Clubs, private sector groups or important companies with good presence on the ground, local youth clubs or organisations, and local religious orders (e.g. monks and nuns who live and work in the community). Such organisations often have the best access and knowledge of the realities on the ground.

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15 Jeffrey Engstrom, Taking Disaster Seriously: East Asian Military Involvement in International Disaster Relief Operations and the Implications for Force Projection, Asian Security, Volume 9, Issue 1, 2013.

16 Interview with Official from Nepal Red Cross Society, 28 March 2016.

17 American Red Cross, *Nepal Earthquake: One month update* (May 2015), accessed 20 April 2016, http://www.redcross.org/images/MEDIA_CustomProductCatalog/m51440295_Nepal-Earthquake-One-Month-Update_May-2015.pdf

Assess direct cash distribution

The Nepal Earthquake experience and other post disaster scenarios have shown that in a number of cases direct cash distribution yielded better results than distribution of relief items and goods.[16, 17] Organisations like the Nepal Red Cross tried this for the very first time, found it effective and generated better results on the ground. This highlights that cash distribution as aid should also be considered by other responders if possible. How the distribution takes place, the amount to be distributed, and to whom are some aspects which would require further assessment by the international community.

The search for survivors after the earthquake. Credit: Sebastian Stenzel via Flickr Creative Commons

CONCLUSION

Overall the response to the Nepal earthquake in 2015 was considered a success by most parties interviewed. Across the board, field interview participants expressed that their respective organisations or sectors had responded well, with some noted reservations in the aftermath of the earthquake. This was true of both participants in Nepal as well as various international responders interviewed.

Despite the relatively positive perceptions however, the field research revealed certain areas that could have been improved. These observations cut across the various aspects of response including strategic planning, aid delivery, aid provision and aid distribution, which have been highlighted in this policy brief. It is hoped some of these field observations and policy recommendations will be useful and help to make future immediate international response to disasters more effective.

ABOUT THE AUTHORS

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Dr Alistair Cook's research interests include non-traditional security, human security, critical security, civilian protection and humanitarianism. His work focuses in particular on humanitarian assistance and disaster relief in the Asia-Pacific. He has recently co-edited a book titled *Irregular Migration and Human Security in East Asia* (Routledge, 2015) and has published in a variety of journals. He is also a resident analyst on Myanmar and regional security issues for Channel News Asia.

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ABOUT THE HADR PROGRAMME

RSIS recently established the Humanitarian Assistance and Disaster Relief (HADR) Programme to facilitate and enhance policy-relevant and academically rigorous research on preparedness and response strategies to the fragile and unpredictable humanitarian scenarios we face in the Asia Pacific. The HADR programme team comprehensively investigates cooperation and effectiveness in the emerging humanitarian landscape, regional emergency response frameworks, disaster preparedness, humanitarian technology, and the identification and development of response niches for civilian and military actors. The programme also seeks to develop the next generation of global leaders in HADR through capacity-building and training workshops. It draws on the knowledge and expertise of the Centre for Non-Traditional Security Studies (NTS Centre) and the Institute for Defence and Strategic Studies (IDSS) at the S. Rajaratnam School of International Studies (RSIS).

Core research areas

- *Future HADR landscape in Asia:* This first pillar of the programme tracks the emergence of new humanitarian actors (both state and non-state) and maps particular successes, weaknesses, opportunities and threats in preparing for disaster relief and conflict response in the region. This research area also focuses on the relationships between civilian and military actors and the emerging points of difference and convergence between the two in responding to HADR in the Asia-Pacific.

- *Community protection and assistance:* The second pillar focuses on the complex security environment brought about by vulnerable communities' varying capacity to protect themselves and the increasing number of responders providing assistance. This research area maps the most vulnerable populations so as to better characterise needs assessments and determine where assistance should be deployed and locally implemented.

- *Humanitarian effectiveness:* The third pillar of the HADR programme addresses the challenge of better emergency disaster response in complex situations. There is a significant challenge in effectively and efficiently responding to natural disasters and conflict; this research area evaluates the quality and impact of both military and civilian organisation emergency responses.

- *Humanitarian technology:* The fourth pillar of the HADR programme examines the field of humanitarian technology as applied to a broadly defined context of crises encompassing both natural disasters and conflict zones. This research area identifies the impact technology has on humanitarian responses as well as the emergent challenges of information technology, big data and technological innovations in humanitarian action.

More information on the HADR Programme is available at www.rsis.edu.sg/research/nts-centre/research-programmes/humanitarian-assistance.

ABOUT THE CENTRE FOR
NON-TRADITIONAL SECURITY STUDIES (NTS CENTRE)

The **Centre for Non-Traditional Security Studies (NTS Centre)** conducts research and produces policy-relevant analyses aimed at furthering awareness, and building the capacity to address NTS issues and challenges in Asia. The centre addresses knowledge gaps, facilitates discussions and analyses, engages policymakers and contributes to building institutional capacity in the following areas: Humanitarian Assistance and Disaster Relief; Food, Health and Energy Security; Climate Change, Resilience and Sustainable Development; and Peace and Human Security. NTS Centre brings together myriad NTS stakeholders in regular workshops and roundtable discussions, as well as provides a networking platform for NTS research institutions in the Asia Pacific through the NTS-Asia Consortium. More information on NTS Centre and a complete list of available publications, policy briefs and reports can be found here: www.rsis.edu.sg/research/nts-centre.

ABOUT THE INSTITUTE OF DEFENCE
AND STRATEGIC STUDIES (IDSS)

The **Institute of Defence and Strategic Studies (IDSS)** is a key research component of the S. Rajaratnam School of International Studies (RSIS). It focuses on defence and security research to serve national needs. IDSS faculty and research staff conducts both academic and policy-oriented research on security-related issues and developments affecting Southeast Asia and the Asia Pacific. IDSS is divided into three research clusters: (i) The Asia Pacific cluster – comprising the China, South Asia, United States, and Regional Security Architecture programmes; (ii) The Malay Archipelago cluster – comprising the Indonesia and Malaysia programmes; and (iii) The Military and Security cluster – comprising the Military Transformations, Maritime Security, and Humanitarian Assistance and Disaster Relief (HADR) programmes. Finally, the Military Studies Programme, the wing that provides military education, is also a part of IDSS. For more information about IDSS, please visit www.rsis.edu.sg/research/idss.

ABOUT THE S. RAJARATNAM SCHOOL
OF INTERNATIONAL STUDIES

The **S. Rajaratnam School of International Studies (RSIS)** is a professional graduate school of international affairs at the Nanyang Technological University, Singapore. RSIS' mission is to develop a community of scholars and policy analysts at the forefront of security studies and international affairs. Its core functions are research, graduate education and networking. It produces cutting-edge research on Asia Pacific Security, Multilateralism and Regionalism, Conflict Studies, Non-Traditional Security, International Political Economy, and Country and Region Studies. RSIS' activities are aimed at assisting policymakers to develop comprehensive approaches to strategic thinking on issues related to security and stability in the Asia Pacific. For more information about RSIS, please visit www.rsis.edu.sg