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<b>14. ABSTRACT</b> The US assisted the government of Nepal (GoN) in dealing with the earthquake in April 2015 by sending personnel in uniform with unique air assets. Despite of long political instability coupled with geographical difficulties, the GoN effectively managed the US military support during the response of earthquake. As a result, the US military support was effective due to timely deployment, appropriateness of the assets, operational efficiency, absorptive capacity of host country, good coordination amongst stakeholders, and balanced costs of deploying foreign military assets. This research aims to analyze the effectiveness of the US Military support in relation with Nepalese government capability to manage the foreign military support. Based on the effectiveness, gaps, and weaknesses of the US involvement, it identified major lessons such as pre-engagement with potential disaster support recipient countries, creation of common operating procedure, involvement of experienced personnel, adequate host nation infrastructure, scientific sector division, area familiarization, and flexibility during response for effective foreign military support during disaster. These lessons should be integrated in future to enhance effectiveness of foreign military support during disaster relief operations.					
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**MASTER OF MILITARY STUDIES**

**NEPALESE GOVERNMENT MANAGEMENT OF THE US MILITARY SUPPORT  
DURING THE 2015 EARTHQUAKE RELIEF EFFORT IN NEPAL**

SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF MILITARY STUDIES

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AY 15-16

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## PREFACE

The period of writing this paper “Nepalese Government Management of the US Military Support during the 2015 Earthquake Relief Effort in Nepal” has been an interesting and valuable for me as it provided the opportunity to conduct in depth analysis of disaster management system in Nepal and the mechanism of the US foreign military support for disaster relief operation. First and foremost, I would like to express my sincere gratitude to my mentor Dr. Jonathan Phillips, Head of the Security Studies Department, MCU, for his excellent guidance and supervision. His directions and feedbacks from his in-depth knowledge and expertise have immensely helped me to complete my paper.

I truly express my deepest gratitude to CG-2 faculty members; CDR J. Scott Boros, Military Faculty Advisor, Dr Paul Gelpi, War Studies Faculty Advisor; and Dr Rebecca Johnson, Security Studies Faculty Advisor; for their continuous guidance and encouragement. I would also like to express my sincere gratitude to all members of LCSC for allocating their invaluable time to keep me in right track.

Furthermore, I would also like to acknowledge my family's continuous support, love, patience, and encouragement throughout the work on the paper.

Finally, any deficiencies in this paper are purely my own responsibility.

Maj Subash KC  
CSC, CG# 02

## EXECUTIVE SUMMARY

**Title:** NEPALESE GOVERNMENT MANAGEMENT OF THE US MILITARY SUPPORT DURING THE 2015 EARTHQUAKE RELIEF EFFORT IN NEPAL

**Author:** Major Subash KC, Nepalese Army

**Thesis:** The government of Nepal effectively managed the US military support during the search, rescue and relief operation. As a result, the US military support was effective due to timely deployment, appropriateness of the assets, operational efficiency, absorptive capacity of host country, good coordination amongst stakeholders, and balanced costs of deploying foreign military assets. Based on factors of effectiveness, gaps, and weaknesses, this operation offers many lessons in the field of foreign military support during disasters.

### **Discussion:**

The United States of America assisted the government of Nepal in dealing with the earthquake in April 2015 by sending personnel in uniform with unique air assets. The long political instability of Nepal that caused poor disaster preparedness coupled with geographical difficulties imposed serious challenges to all stakeholders involved in response to the great earthquake. However, despite losing its brave Marines in a helicopter crash, the US JTF 505 remained determined to continue its relief mission through operation SAHAYOGI HAAT. The US PACOM pre engagement in different forms including FTX with Nepalese Army, a key responder of disaster in Nepal, increased interoperability and ease of coordination during the mission. In fact, the US government rightly assessed the need and engaged in Nepal with military aviation assets. The number of tasks and missions performed by the US JTF due to the speed of air assets and flexibility in operation was highly appreciated by all stakeholders. However, many lessons were learnt from this event in relation to foreign military support during the disaster relief operation. This paper will examine the effectiveness of the US Military support during earthquake of Nepal and draw major lessons learnt.

**Conclusion:** This earthquake was in fact a wakeup call for Nepal and the international community to strengthen the effectiveness of disaster response. Major lessons are identified from this incident such as; pre engagement with potential disaster support recipient countries, creation of common operating procedure, involvement of experienced personnel in operation, area familiarization, and flexibility during response. These lessons which are applicable to both host nation and troops contributing countries should be integrated in future to enhance effectiveness of foreign military support during disaster relief operations.

# **NEPALESE GOVERNMENT MANAGEMENT OF THE US MILITARY SUPPORT DURING THE 2015 EARTHQUAKE RELIEF EFFORT IN NEPAL**

## **Introduction**

In today's world, natural disasters have become a serious threat and every nation is preparing relentlessly to face such challenges. The use of foreign military assets has become a common feature to respond to a major natural disaster. Over the past two decades, data shows that the US DOD (Department of Defense) has participated in more than 40 foreign disaster assistance operations only within the Pacific Command (PACOM) area.<sup>1</sup> In recent days, the frequency and scale of natural disaster around the world is increasing tremendously. However, domestic civilian stakeholders advocate the use of foreign military asset as a last resort. They view that the disaster relief operations should remain predominantly an internal and civilian function. In order to avoid civil-military friction, the foreign military assets should be effective in terms of saving lives and providing relief during the disaster response. On the other hand, the host nation should be capable of managing the foreign military assistance.

Most recently, the United States of America, a true friend of Nepal, provided personnel in uniform with unique air assets during the response to the earthquake in Nepal. The government of Nepal effectively managed the US military support during the search, rescue and relief operation. As a result, the US military support was effective due to timely deployment, appropriateness of the assets, operational efficiency, absorptive capacity of host country, good coordination amongst stakeholders, and balanced costs of deploying foreign military assets. Based on the factors of effectiveness, gaps and weaknesses, this event offers many lessons in the field of foreign military support during disasters. Hence, this research aims to analyze the effectiveness of the US Military support during the earthquake in Nepal in relation with Nepalese

government capability to manage the foreign military support. It also aims to draw major lessons learnt which if incorporated will definitely enhance the effectiveness of foreign military support to respond a major natural disaster anywhere in the world.

This paper is divided into seven parts. The first two sections will set the background that includes the political situation during the earthquake and an overview of the disaster management system in Nepal. The third and fourth sections will outline the immediate response of government of Nepal (GoN) and US involvement. The fifth section will analyze the effectiveness of the US military support based on six variables namely timeliness, appropriateness, efficiency, absorptive capacity, coordination, and cost. The analysis will be conducted in relation with capability of GoN to manage foreign military support. Those six criteria are based on “principles articulated in the Oslo Guidelines”<sup>2</sup> and the actual experience of the researcher who acted as liaison officer for the US Joint Task Force 505 (JTF 505) in Nepal during the event. The sixth section will offer the major lessons learnt in relation to foreign military support to disaster response followed by the summary in the final section.

## **Background**

Nepal is one of the most disaster prone countries in the world due to its geographic location. It ranks 20<sup>th</sup> on overall disasters and specifically is the 11<sup>th</sup> most earthquake prone country in the world.<sup>3</sup> Nepal lost one third of its population in Kathmandu valley including then-King Abhaya Malla during the first recorded earthquake of 1255. Since then, Nepal has faced three major earthquakes in 1934, 1988, and the most recent one in 2015.<sup>4</sup> On the midday of Saturday, 25 April 2015, a 7.6 magnitude earthquake with its epicenter in Gorkha district struck Nepal that claimed loss of 8,856 lives and injured 22,309. The catastrophic Gorkha earthquake

was followed by 423 aftershocks with the scale of more than 4 magnitudes as of January 4, 2016.<sup>5</sup> Out of those aftershocks, one measuring 6.8 magnitude struck after 17 days on May 12, 2015 with the epicenter near Mount Everest. The GoN projected that nearly one third of the Nepalese population (about eight million people) were affected by the earthquake. Similarly, property worth around 700 billion Nepalese Rupees was damaged. Overall, 31 districts out of 75 in Nepal have been affected, which are depicted below in the map in figure-1.<sup>6</sup>

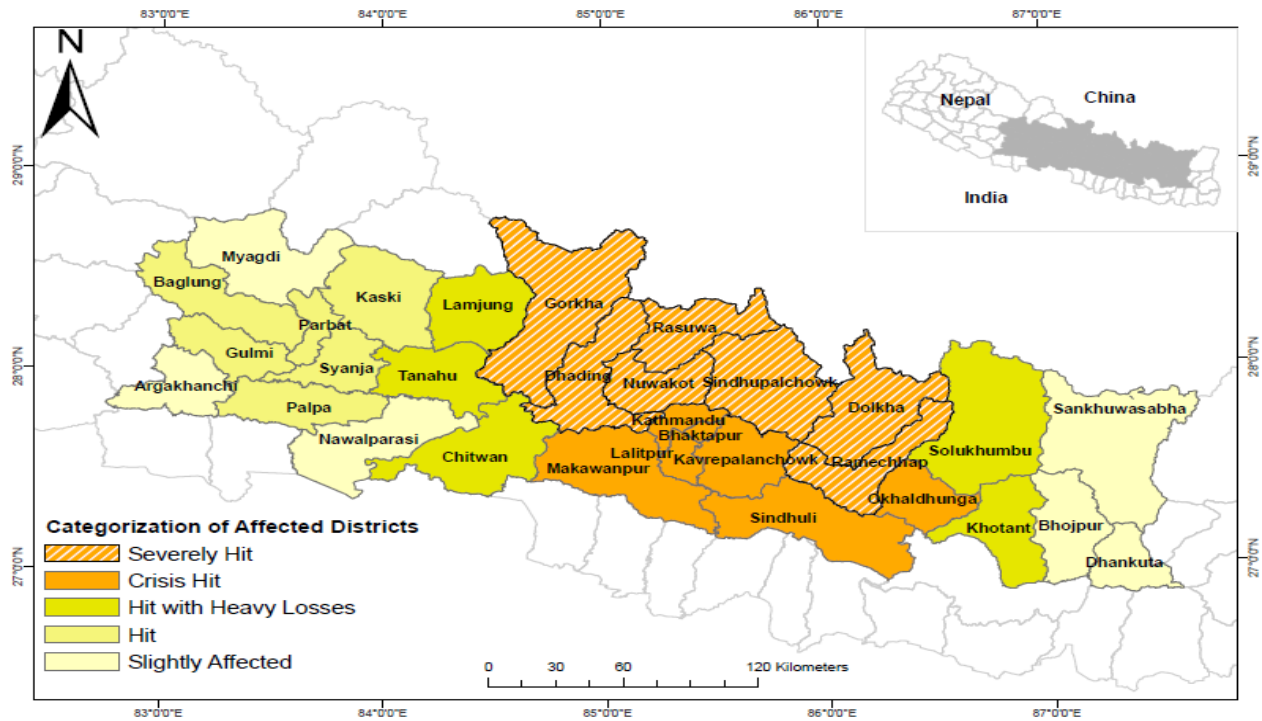


Figure 1: Map of Earthquake Affected Areas in Nepal<sup>7</sup>

### Nepal in April 2015

Landlocked between India and China, Nepal has undergone a radical political transformation since 2006 when the ten year long insurgency that had claimed more than 13000 lives came to an end.<sup>8</sup> Nepal turned from a Hindu constitutional monarchical state into a secular federal democratic republic. This transition resulted in political instability which affected every sector of the nation in recent years. The newly elected constituent assembly (CA) in 2008 with

majority of former rebels, United Communist Party of Nepal -Maoist (UCPN-M) could not draft a new constitution, and the first CA was dissolved four years later mainly due to lack of consensus amongst the political parties. In the subsequent CA election of 2013, the traditional political parties, the Nepali Congress (NC) and the Communist Party of Nepal–United Marxist-Leninist (CPN-UML) prevailed against the revolutionary UCPN-M. They formed the coalition government under Prime Minister Sushil Koirala from NC with the main agenda of drafting a new constitution. However, the new CA also failed to draft the constitution on its deadline of 22 January 2015 due to different policies of major parties mainly on federal structure, forms of government, and the electoral system.<sup>9</sup> Nepal was facing greater level of political instability during the time of the earthquake that directly impacted disaster preparedness of the nation. As a result, Nepal’s political leaders, who have been deadlocked in negotiations over a new constitution for the past seven years, were quite literally shaken up by the Gorkha earthquake.

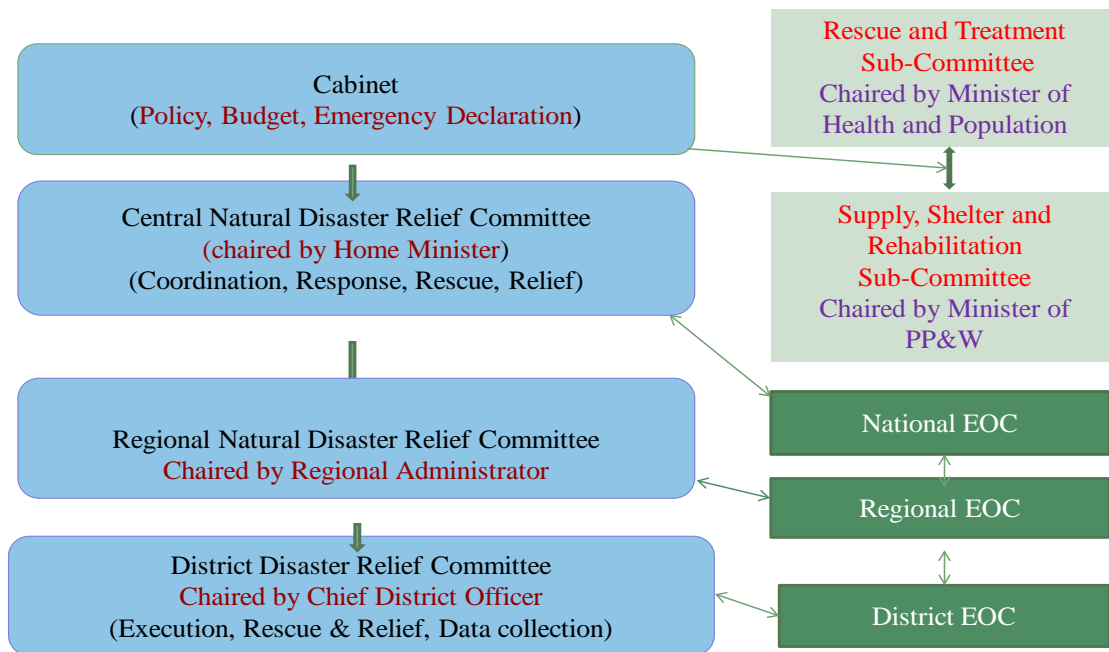
### **Existing Disaster Management System in Nepal**

To deal effectively with the disaster, GoN has promulgated various laws, policies, and frameworks to include the Natural Calamity Relief Act (1982), the National Strategy on Disaster Risk Management (NSDRM) 2009, and the National disaster response framework (NDRF) 2013. The Relief Act has provisioned an institutional arrangement at various levels to tackle disaster. Similarly, the NSDRM 2009 which is based on the Hyogo Framework for Action encompasses national strategy for the prevention, mitigation, preparedness, response, and recovery. It provides clear roles and functions for different ministries in various phases of disaster. The strategy also describes the government’s vision of transforming Nepal into a disaster resilient nation.<sup>10</sup> Another major document, the NDRF-2013 has approached the disaster response with a cluster system specifying primary as well as secondary roles for each stakeholder during disasters both

within and beyond the capacity of the national response. It further establishes internal coordination mechanisms to support national disaster response activities.<sup>11</sup>

### Institutional Arrangement

The Relief Act directed the provision of the Central Natural Disaster Relief Committee (CNDRC), Regional Disaster Regional Natural Disaster Relief Committee (RNDRC), and District Natural Disaster Relief Committee (DNDRC). The relief committees are responsible for overall disaster response at their specific government level. Once the cabinet declares a state of emergency as recommended by the CNDRC, specific operational activities are assigned to the committees, ministries, and organizations for disaster response. The chain of relief committees at different level is shown below in the chart in figure-2.



Fig

Figure-2: The Institutional Arrangement of Disaster Management in Nepal<sup>12</sup>

In order to respond to mega scale disasters, the cabinet will declare the emergency and appeal for the international assistance specifying the need in terms of manpower, assets, funds or services. Such appeal is generally made either directly or through the UN Humanitarian Coordinator and Red Cross Movement. The general response mechanism is depicted below in the chart in figure-3.

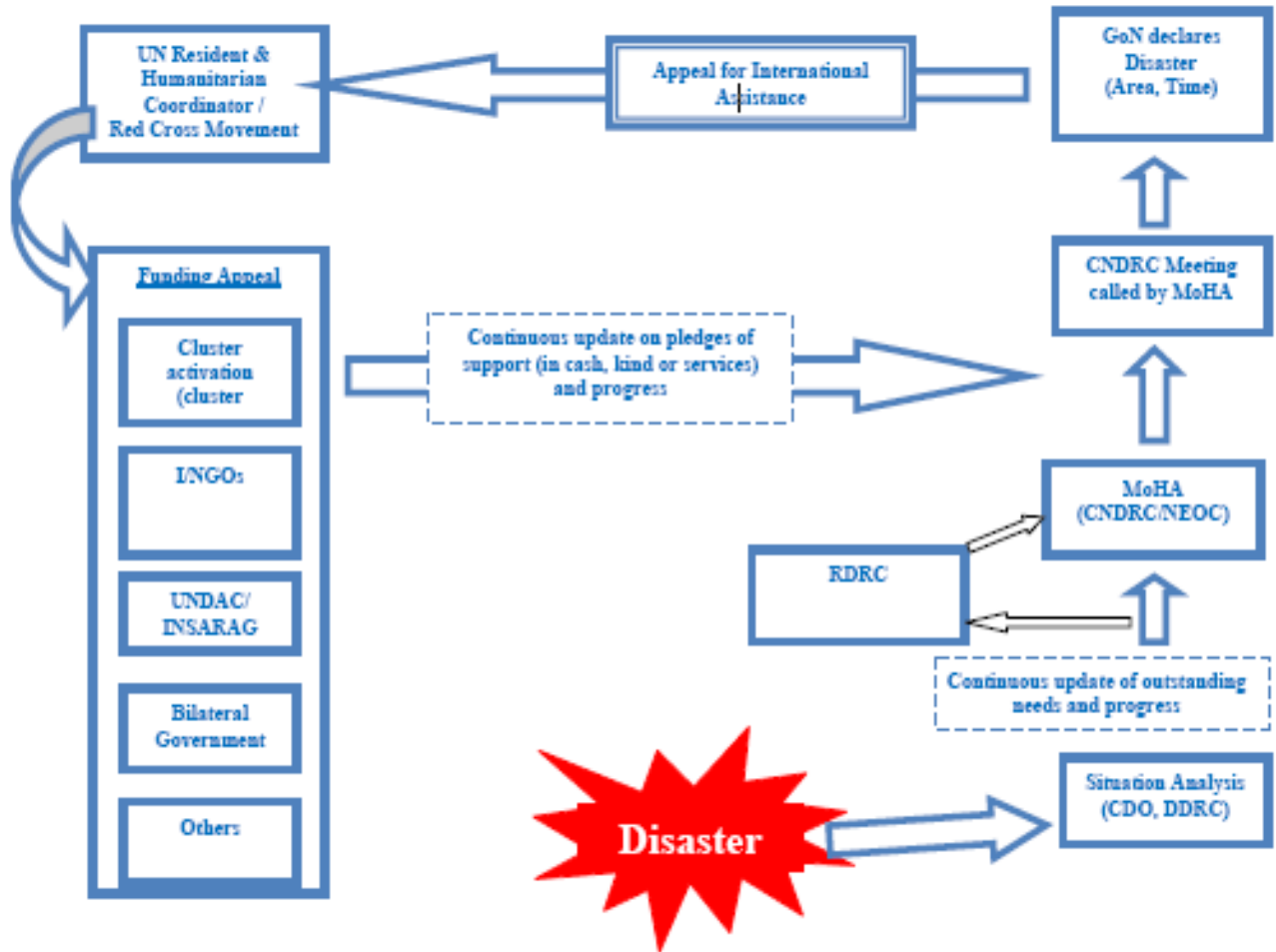


Figure-3: The Response Mechanism of GoN for Mega Scale Disaster<sup>13</sup>

### Coordination Mechanism between National Authorities and International Actors

The NDRF has provisioned various coordination mechanisms and chain of coordination to respond large scale disaster. As per the provision, the National Emergency Operation Center

(NEOC), Onsite Operation Coordination Centre (OSOCC), and Multi-National Military Coordination Centre (MNMCC) will be established for the effective control and coordination of disaster response. The NEOC shall act as the secretariat for the CNDRC and the overall response operation. It can also include search and rescue and humanitarian assistance agencies working inside the country. Specifically, MNMCC led by Nepalese Army under the direction of the Ministry of Home Affairs, shall mobilize foreign military manpower and assets as necessary in coordination with NEOC and OSOCC. Contact between the OSOCC and MNMCC shall be maintained through the NEOC or through designated liaison officers as depicted in the chart in figure-4.

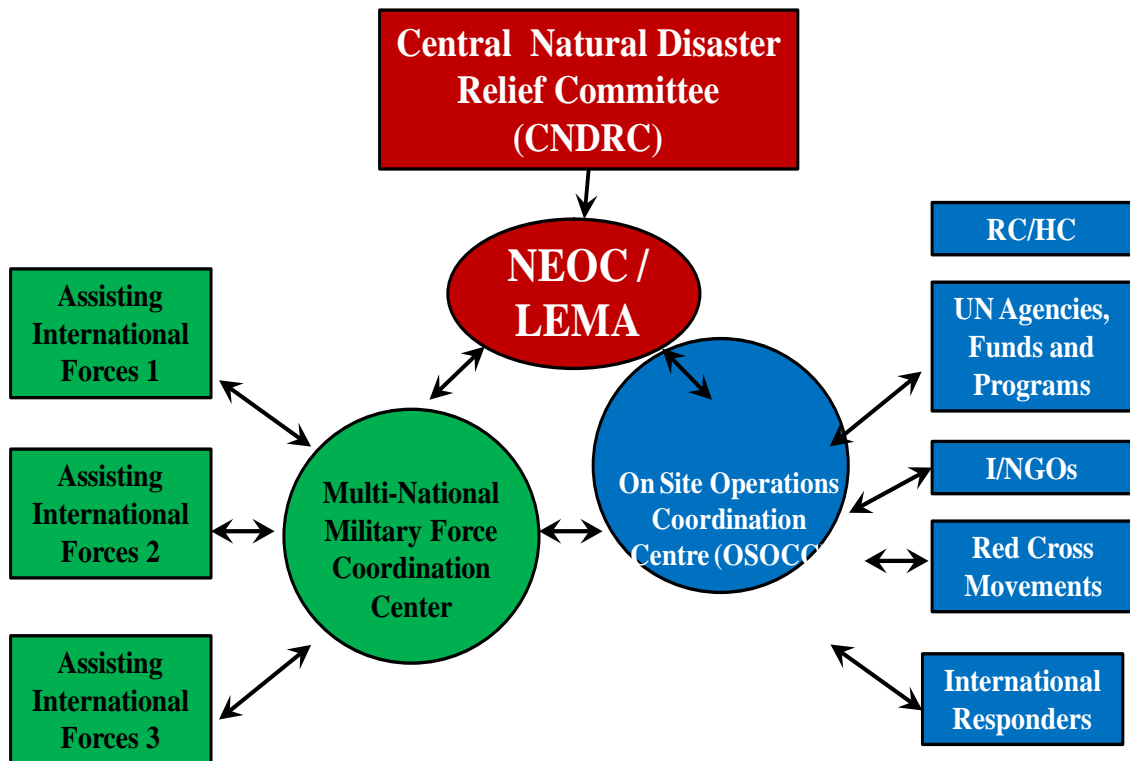


Figure-4: The Coordination Mechanism between National and International Actors<sup>14</sup>

## **The Response to the Gorkha Earthquake**

As an immediate response to Gorkha earthquake, the GoN declared a state of emergency in 14 highly affected districts and mobilized all domestic agencies for search, rescue and relief missions. Due to the large scale of disaster, the GoN also appealed for international assistance using bilateral and multilateral channels. The international community sprung into action by sending relief material and assets with civilian and military personnel. In coordination with the MNMCC, rescue and relief teams from 34 countries including 18 multi-national forces with 4175 military personnel rescued dozens of people from the wreckage and distributed tons of relief material.<sup>15</sup>

According to the Ministry of Home Affairs, “for search and rescue, 4,236 helicopter flights were used (GoN/private), 7,558 persons rescued by air, and 4,689 persons rescued by land.”<sup>16</sup> Nepal itself mobilized more than 90 percent of its security forces for search and rescue effort that includes 65,059 members of the Nepalese Army, 24,775 from the Armed Police Force, and 41,776 personnel of Nepal Police. Similarly, 22,500 civil servants and 4,000 government and private health workers were working continuously to assist the rescue and relief efforts. In addition, the UN, different international agencies, and sixty foreign countries contributed their active support for emergency relief and humanitarian assistance. To manage the incoming and outgoing flow of relief materials, a staging area was established in only one international airport of Nepal, Tribhuvan International Airport (TIA), located at Kathmandu.<sup>17</sup>

In order to coordinate and mobilize foreign military support, the Nepalese Army established the MNMCC immediately after the international appeal from the GoN. It helped in the systematic mobilization and coordination of international search and rescue (SAR) teams that arrived in Nepal in the form of multinational military assistance. A liaison officer from the

Nepalese Army was attached to each of these international Military SAR teams to utilize them in a systematic and coordinated manner. At the same time, the practical delay in establishing the UN-OCHA led OSOCC, which should have been responsible for coordinating the functioning of civilian international SAR teams, led to confusion amongst the nonmilitary teams. This challenge initially was overcome by the MNMCC undertaking the responsibility until OSOCC became functional.<sup>18</sup>

### **The US Involvement**

The United States of America initially assumed that the United States Agency for International Development (USAID) with its continuous presence since last 60 years would satisfy the assistance effort in Nepal. However, the scale of the disaster compelled the US government to add more manpower and assets. In fact, DOD in the past with its long history of supporting Nepal had focused its military engagement primarily on four areas: support to the professionalization of the Nepalese Army and Ministry of Defense, enhancement of Nepal's peacekeeping capabilities and contributions, develop Nepal's ground force capacity, and most relevant was to increase Nepal's humanitarian assistance and disaster response capabilities. In recent years, DOD through PACOM has engaged in several disaster response exercises in Nepal. In Sept 2013 the DOD held a field training exercise focused on an earthquake impacting the Kathmandu valley.<sup>19</sup>

Just hours after the Gorkha earthquake, PACOM ordered two Special Forces team to provide assistance in SAR efforts which were already in Nepal for joint training with Nepalese Army. US Transportation Command immediately tasked two C-17 aircraft to airlift the USAID disaster assistance response team (DART) as well as urban search and rescue teams from Fairfax

Virginia and Los Angeles County California. The teams arrived in Kathmandu on April 28. The rapid movement of the teams paid off when both were involved in the rescue of a 15 year old boy from the rubble on April 30 after being buried for more than 120 hours. These teams were called upon repeatedly as they provided vital medical care to many injured people often working closely with the US military medics and personnel.<sup>20</sup>

Initially, PACOM deployed a twenty person joint humanitarian support team which arrived in Nepal on April 29. This team, led by Marine Brig Gen Paul Kennedy consisted of military experts in multiple specialties focused on determining possible military staging locations as well as specific military support requirements. After the assessment of the DART and joint humanitarian support team, it was reported that more military support would be required, particularly air assets and airfield management specialists. As a result, the US decided to increase the military response effort and established JTF505 under the command of Marine Lieutenant General John Wissler to conduct the relief operation which was named Operation SAHAYOGI HAAT in Nepali language (“Helping Hand” in English). The JTF comprised more than 900 total personnel working in three locations: Nepal, Thailand, and Japan. More than 300 personnel were staged forward in Nepal under Brigadier General Kennedy, 260 personnel in Thailand, and remaining personnel at Okinawa, Japan.<sup>21</sup>

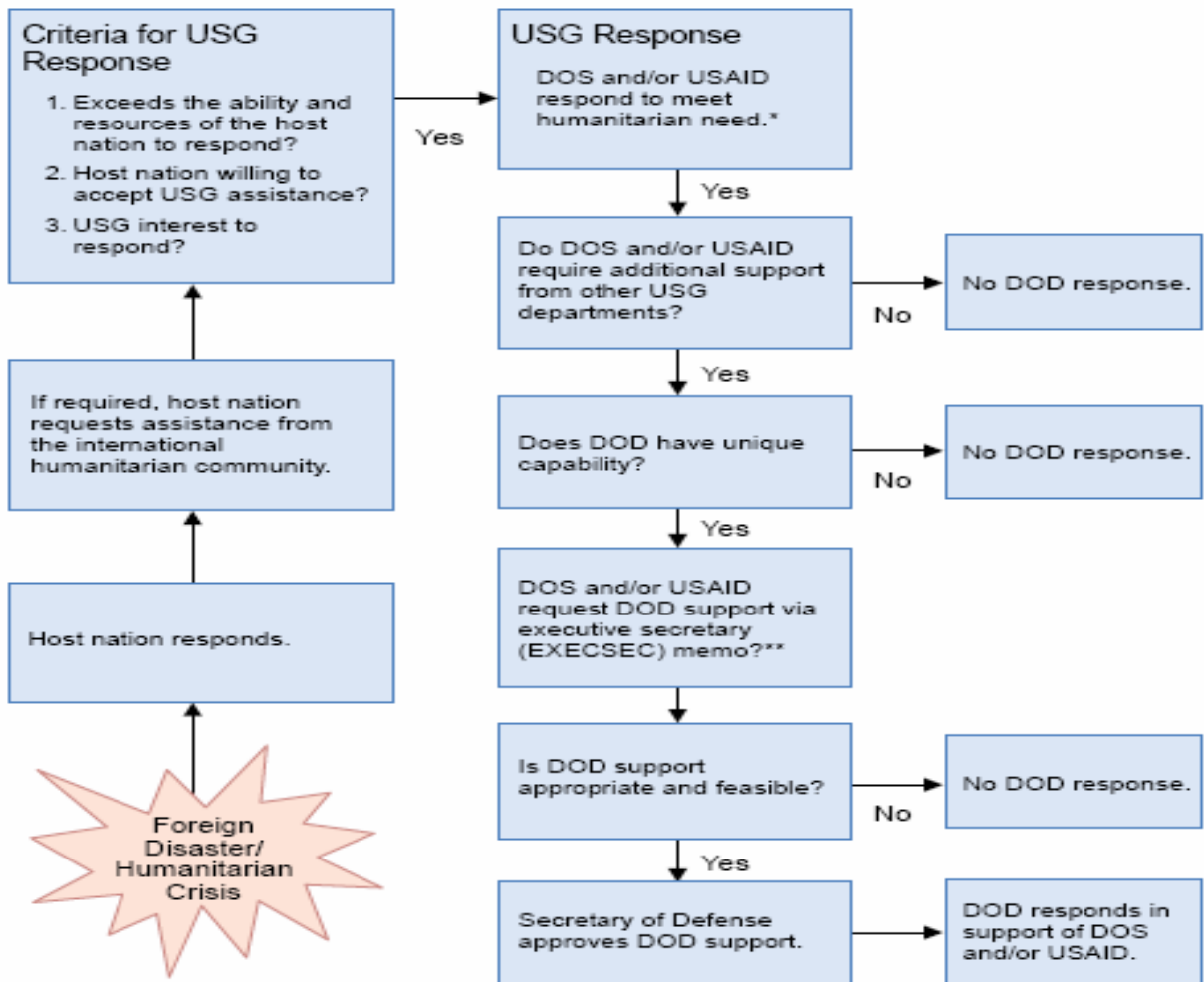
### **General Mechanism for the US Military Support to Foreign Disaster Relief Assistance**

According to Joint Publication 3-29, “Foreign humanitarian assistance operations including foreign disaster relief (FDR) operation are normally conducted in support of the USAID or the Department of State.”<sup>22</sup> In Nepal also, DOD personnel deployed in support of USAID providing unique military capabilities to the response efforts. The assistance was in

accordance with the policy that “The US military normally will only be asked to provide FDR when it brings a unique capability or when the civilian response community is overwhelmed.”<sup>23</sup>

Following chart in figure-5 shows the general process of requesting DOD support for any foreign humanitarian assistance.

### Requesting Department of Defense Support



\* A disaster declaration from the COM or State Department is required for USAID/OFDA to respond.  
 \*\* DOS concurrence is annotated on the request memo from USAID before it is sent to DOD.

**Legend**

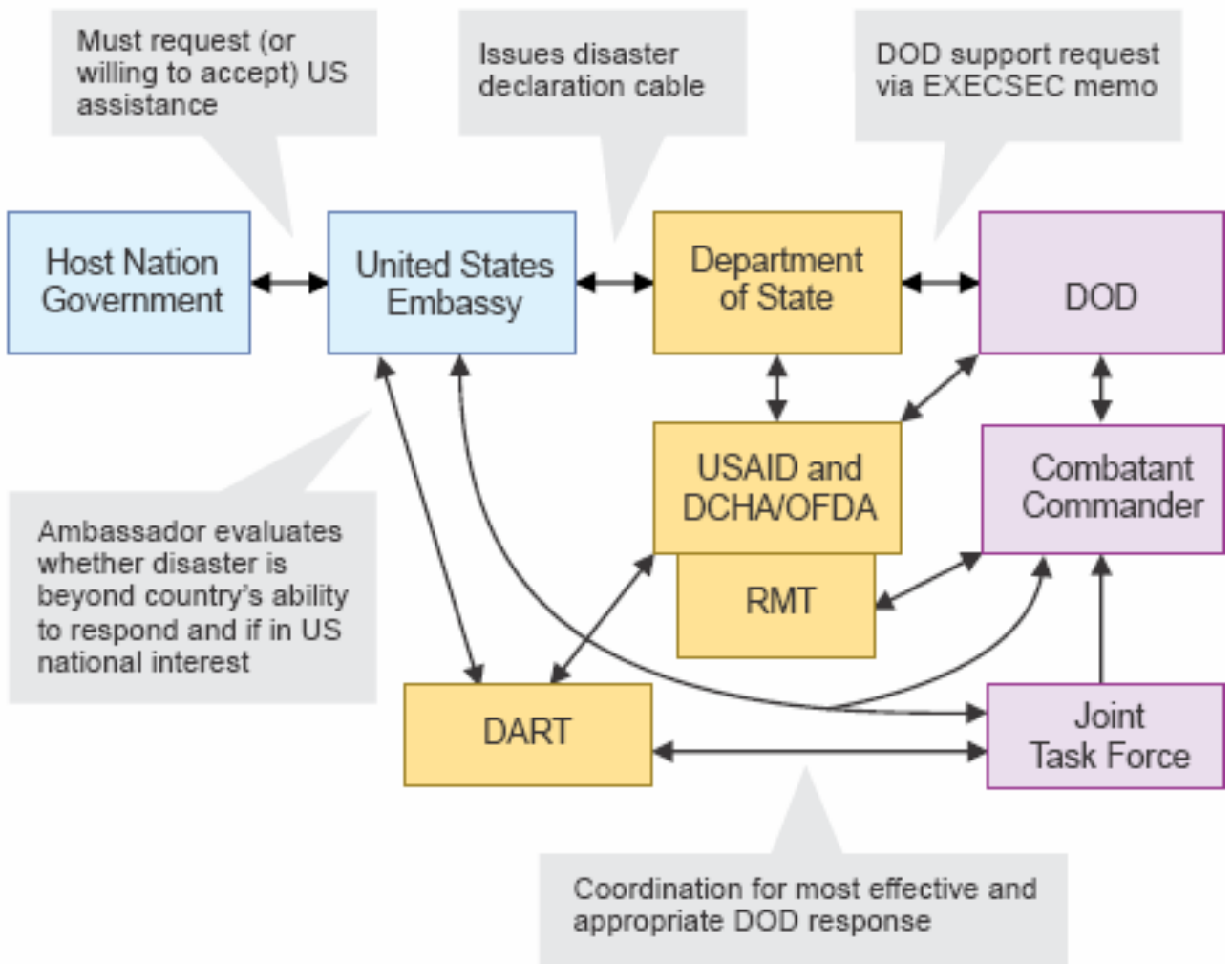
DOD	Department of Defense	USAID	United States Agency for International Development
DOS	Department of State	USG	United States Government

Figure: 5 General Procedures in Foreign Disaster Relief Operation<sup>24</sup>

Between various actors and agencies of the US Government, the coordination mechanism plays an important role to the effective response. The following chart in figure-6 shows the coordination chain in between various agencies.

## Interagency Coordination Flow

(When DCHA/OFDA and DOD Respond)



### Legend

DART	disaster assistance response team	OFDA	Office of US Foreign Disaster Assistance
DCHA	Bureau for Democracy, Conflict, and Humanitarian Assistance	RMT	response management team
DOD	Department of Defense	USAID	United States Agency for International Development
EXECSEC	Office of the Secretary of Defense, Executive Secretary		

Figure: 6 Interagency Coordination Flow<sup>25</sup>

## **Use of the US Military Assets**

During the needs assessment, it was determined that foreign military assets especially in aviation would be critical due to Nepal's geography and lack of air transport means. Based on this assessment, JTF 505 provided airlift, SAR support, and other technical support like damage assessment to the USAID-led effort, mainly in eastern Nepal. The US military capabilities deployed to Nepal included three UH-1Y Huey helicopters, four MV-22B tilt rotor Ospreys, and two KC-130J Hercules from the US Marine Corps and the US Air Force deployed two C-130H transport aircraft, four C-17 Globemaster III aircraft, and the 36th Contingency Response Group.<sup>26</sup>

JTF 505 became operational on May 3, 2015. As of May 18, 2015, a total of 69 earthquake casualties were evacuated by US air assets. The major rescue operation it took part in was immediately after the strong aftershock of May 12, 2015. The JTF flew 290 sorties with total of 938 flight hours. It airlifted 1488 passengers. Similarly, the JTF airlifted 724 tons of relief materials during the effort. Out of this, 109 tons of relief supplies were delivered in its allocated forward affected areas. Also, in order to support the Nepalese Army policy of reaching out to village development committee level in affected areas, the JTF provided airlift to 91 Nepalese Army personnel for their deployment in the forward areas of Kavre and Sindhuli district. About 4 tons of supply to Nepalese Army personnel in forward areas was made through the US air assets.<sup>27</sup>

As the response effort continued, the logistical expertise of the 36th Contingency Response Group significantly supported the handling of aid stockpiles at only one International Airport. The group imparted training to Nepalese army and airport personnel during their ongoing operations. In addition, DOD aircraft have also partnered with the USAID DART to

view and assess areas of Nepal that had been made inaccessible by landslides and debris. However, on May 12, 2015, one of the US Marine Corps UH-1Y Huey helicopter crashed about 8 miles north of Charikot, Nepal, while supporting a rescue mission following a second earthquake. Six US Marines, two Nepalese service members and five civilians lost their lives in that unfortunate incident. JTF 505 formally closed its mission in Nepal on May 23, 2015.

### **The Effectiveness of the US Military Support**

In this major section, the six aspects of the US military support during the response of earthquake in Nepal in relation to capability of GoN to manage it will be evaluated. Firstly, the timeliness by which the resources deployed and started its operation. The second aspect is the appropriateness of the assets to the situation and mission. The third variable is the efficiency with which the assets operated and were used within the relief effort. The fourth aspect is the absorptive capacity of Nepal as whether it could accommodate and effectively use incoming relief support. The fifth variable is the coordination of the relief effort with other stakeholders including civil military coordination. The final aspect is the evaluation of costs against benefits of deploying US military assets. It is important to note that these aspects of effectiveness are interconnected and overlap with each other.<sup>28</sup>

#### **Timeliness**

Earthquakes often occur without any notice resulting in calls for an immediate response to prevent further damage and loss of life. For earthquakes, SAR assets are most needed in the first hours when there is the best chance of saving lives. After the first earthquake, two US Special Forces teams that were in Nepal quickly began life saving relief and medical support despite lacking appropriate equipment. JTF 505 became operational on May 3, 2015, a week after the major earthquake.

However, the timely deployment could be affected by many factors such as the location of contributing countries' military assets, bureaucratic procedure, and pre-engagement for interoperability. The major force of JTF 505, comprised of the 3<sup>rd</sup> Marine Expeditionary Force, was at 12 hours away by air from Kathmandu. Also, Nepal being a landlocked nation, required diplomatic and bureaucratic coordination with its neighbors for bringing in military assets. The GoN fully supported the US side to overcome such constraints. Also, PACOM's pre experience with the GoN and Nepalese Army for disaster response through various joint training and seminars proved to be helpful during the real event. Overall, though the JTF 505 could not support immediately after the first earthquake, it contributed fully to the immediate response after the strong aftershock of May 12, 2015.

### **Appropriateness**

According to the Oslo Guidelines and many countries' stated policies including those of the US, "Military assets should only be deployed if they offer a unique capability that no available civilian asset can provide." <sup>29</sup> In Nepal, aviation assets were very critical due to its geography, poor road communication network, and minimum numbers of air assets in both the military and civilian sectors. Though Indian and Chinese military contributed to support the relief effort with their aviation assets, it was not enough. Even after the US involvement, the GoN lacked aviation assets to deliver relief material in highly affected remote areas. Also, the contingency response group manpower and assets were critical for Nepal to manage and operate the only international airport in Nepal. It also assisted with the management and handling of the centralized humanitarian staging area at the Kathmandu airport.

However, the type of aircraft used by JTF 505, especially the MV-22 Osprey, was not suitable in mountainous areas. Its payload gradually decreased as the altitude increased. Also, it

caused some public frustration in areas where the fragile building structures were further damaged due to the strong wind effect during its landing and takeoff.<sup>30</sup> Nevertheless, to avoid such effects, these aircraft later were utilized in between domestic airports mostly in plain areas.

Another important aspect to determine the appropriateness of using foreign military assets is length of deployment. It is the general norm that whenever the civilian sector built up its capacity, the foreign military should leave. JTF 505 operated in Nepal following this principle and closed its mission on May 23, 2015. Overall, the continuous coordination between Nepalese side and JTF made the military assets provided by the US appropriate in the Nepalese context for the humanitarian relief operations.

### **Efficiency**

Within the short timeframe of its involvement, JTF 505 assisted the whole relief effort very efficiently in terms of amount of supplying relief material, number of flights, and the importance of the tasks it performed. JTF 505 was self sufficient for every aspect such as logistics and maintenance. It continuously focused on its mission despite losing men and resources in one unfortunate incident. The assets were used in accordance with their capacity and characteristics. After the strong aftershock hit Nepal on May 12, 2015, the JTF swiftly changed its mission to search and rescue from its previous mission of delivering relief material. In fact, the ability of Nepalese Army liaison personnel to speak English, previous joint exercises, and similar practices for disaster management contributed to effective interoperability between the US Military and Nepalese Army.

However, the GoN imposed restriction on solo flights. All foreign sorties were supposed to include at least one liaison officer from Nepalese Army. Such restrictions reduced the amount of payload, but on the other hand, it ensured the aircraft kept within its assigned sector and

facilitated the communication with local people and the military leadership. Also, JTF 505 rightly deployed itself to operate from capital Kathmandu. Its intermediate staging location at Bangkok, Thailand, ensured continuous support from rear to forward areas. Such deployment definitely served the best for increasing the efficiency of the operating forces. Overall, the US military assets operated efficiently and were optimally utilized within the whole relief effort.

### **Absorptive Capacity**

Absorptive capacity is the capability of the host nation to manage and coordinate the available foreign assets during a disaster relief operation. In fact, “The presence of domestic capacity for disaster management is proportional to the effectiveness of the use of foreign military assets in disaster relief operations.”<sup>31</sup> In the Nepalese context, Nepal was struggling with political transition and instability caused by the past ten years of conflict. The capacity of only one international airport was overstretched to receive relief material. Nepal’s disaster management policy and framework was well developed on paper but the actual implementation was not effective. Even at some period during the response, allocation of the operating base for foreign military and air traffic management was difficult for the Nepalese authorities. However, the Nepalese Army, with its high professional standard, coordinated and mobilized the relief material; manpower arrived from international stakeholders in the early days. In essence, the absorptive capacity of Nepal during the earthquake disaster was acceptable but not well developed.

### **Co-ordination**

“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."<sup>32</sup> During the response, coordination with the foreign military units was relatively easier because the Nepalese Army has a long experience of participating in UN peacekeeping operations. An excellent working environment was created between the liaison officers and JTF 505 planners. Even the Nepalese Army liaison officers were invited during the planning of operations for next 72 hours. The mechanism to plan air operations was also very professional. The presence of at least one liaison officer at MNMCC and TIA from the JTF and Nepalese Army increased the level of coordination.

On the other hand, one of the biggest challenges for all stakeholders was the presence of many civilian and military actors each with different interests, rules, doctrines, and procedures. These difficulties were addressed by having twice-daily tasking meetings. The sharing of information between civilian and military actors was made possible through daily briefings between OSOCC and MNMCC. USAID and JTF 505 coordinated with each other to perform effectively during the relief operation. In fact, Brig Gen Paul Kennedy had a previous experience of working with USAID during Typhoon "Haiyan" response in Philippines. Such experience was fruitful for Nepal as it facilitated sound civil military cooperation. In crux, the coordination part of operation SAHAYOGI HAAT was excellent.

## **Costs**

In general, deploying a military asset is more expensive than deploying an equivalent civilian asset. This reality often creates debate during the use of military assets in natural disaster relief operations. The Oslo Guidelines state clearly that "foreign military assets should be made available at no cost to the affected country, unless there has been prior agreement."<sup>33</sup> As of May 20, 2015, "the total amount of the U.S. humanitarian assistance for the disaster was nearly \$47

million, including \$32.5 million in funding from USAID and \$14.3 million from the U.S. Department of Defense.”<sup>34</sup> Though the DOD expenditure for JTF 505 relief operation seems high in the Nepalese context, the aid in cash was not important for Nepal during the response. Abundance of relief material from various donors was piled up in humanitarian staging area. The major obstacle was the lack of means for transporting these materials to forward affected regions. Hence, the arrival of the US military support with aviation asset was more important for Nepal than the aid in cash. In this regard, the US military support was cost effective and beneficial during the response to the earthquake in Nepal.

### **Major Lessons Learnt**

As discussed above, the US military support during response of earthquake disaster in Nepal was effective with some limitations. It actually taught many lessons in the field of foreign military support in disaster relief operations based on factors of effectiveness, gaps, and weaknesses. Following are the major lessons learnt which should be considered in future for more effective foreign military support during disaster relief operations. These lessons will be useful for both host nations and troops contributing countries.

1. **Countries should have pre bilateral or multilateral agreement and common standard operating procedure.** During the response in Nepal, there was confusion amongst nations about what kind of support the foreign military should come up with. Also, many stakeholders were operating with their own standard operating procedures. Hence, though the needs assessment will be pivotal to determine the foreign military assistance, it is highly encouraged to have bilateral or multilateral pre-agreed arrangement for timely and effective foreign military support. Such agreement should also define the assets for foreign military

assistance. At the same time, it is strongly recommended to contributing nations like the United States to create or improve standard operating procedures with potential disaster relief recipient countries like Nepal.

2. **The contributing nation should have pre-working experience with disaster prone countries in the World.** Previous working experience of the US Government with Nepal in various levels with major stakeholders like Nepalese Army in the form of training, seminar, and exchange program strengthened the coordination part in response of earthquake. In fact, such engagement will become a force multiplier during actual time of disaster and should be practiced frequently.

3. **Sector division for air operations in relief operation should be done scientifically and the aircraft should match the geographical reality.** The host nation and assisting military contingent should allocate sectors for air operations to distribute the relief not only based on geography but also based on characteristics and capabilities of an aircraft. Also, the assisting military contingent should come up with the aircraft suitable for geographical structure of host Nation. In Nepalese context, MV-22 Osprey was not effective as assumed due to its limitation of payload in higher altitude.

4. **Flexibility in mission increases the efficiency.** JTF 505 during the operation immediately switched on search and rescue mission from relief distribution and saved many lives after the strong aftershock in May 12, 2015. Hence, flexibility in accordance with situation is necessary for the operational efficiency in relief operation.

5. **Disaster prone countries should have adequate infrastructure to ensure its sufficient absorptive capacity.** Although there were no significant damages from the devastating

earthquake to the lone international airport in Nepal, a lot of challenges emerged due to its limited cargo handling and parking capacity. As a result, many problems were faced to coordinate the handling, storage, supply, and distribution of the relief materials. Hence, the disaster prone nation like Nepal should at least have two international airports to accommodate flow of international relief material. This will also augment the absorptive capacity of that particular nation. Donor countries like the US through its security cooperation fund should focus on developing such capability of disaster prone countries.

6. **Knowing the terrain and weather of operating area is crucial for the troop's safety and security.** Area familiarization is necessary for the contingent came up with the aviation asset during the relief operation. One of the major findings of the Huey helicopter crash was the adverse terrain and weather conditions of Nepal. Hence, safety and security of the aircraft should be maintained by having enough knowledge of terrain through area familiarization.

7. **MNMCC should be made ready to accept additional tasks in the initial days of major disaster.** In the disaster management framework, generally the OSOCC would coordinate the efforts of civilian search and rescue teams. In Nepal during the initial stages, the OSOCC could not be established and all the SAR operations both military and civilian were coordinated through the MNMCC. Thus, enhanced military command centre beyond the cell envisaged is very essential.

8. **Previous experience of military personnel in disaster response becomes force multiplier.** The personal pre-experience of Brigadier General Kennedy during Typhoon "Hayan" in Philippines paid a lot to have effective interagency coordination and reduced civil

military friction in Nepal. Hence, whenever possible, it is advisable to select military personnel with previous disaster relief experience.

### **Summary**

A disaster like an earthquake does not give prior warning and natural disasters of various types are frequent in a high risk country like Nepal. Nepal's geography itself is an obstacle for improving transportation and utilities throughout the country. In addition, the long political instability in a country sidelined full-scale disaster preparedness. Despite of such obstacles, the government of Nepal effectively managed the US military support during the search, rescue and relief operation. As a result, the US military support was effective due to timely deployment, appropriateness of the assets, operational efficiency, absorptive capacity of host country, good coordination amongst stakeholders, and balanced costs of deploying foreign military assets. However, major lessons such as pre engagement with potential disaster support recipient countries, creation of common operating procedure, involvement of experienced personnel, adequate host nation infrastructure, scientific sector division, area familiarization, and flexibility during response has been learned based on the effectiveness, gaps, and weaknesses of the US involvement. Finally, these lessons which are applicable to both host nation and troops contributing countries should be integrated in future to enhance effectiveness of foreign military support during disaster relief operation.

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### **Endnotes**

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<sup>14</sup> Ministry of Home Affairs, *National Disaster Response Framework*,6-7.

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<sup>20</sup> *Everest Trembled: Lessons Learned from the Nepal Earthquake Response*, 35.

<sup>21</sup>*Everest Trembled: Lessons Learned from the Nepal Earthquake Response*, 36.

<sup>22</sup>US Joint Chiefs of Staff. *Foreign Humanitarian Assistance*. Joint Publication 3-29, (Washington, DC: March 03, 2014),IX, [http://www.dtic.mil/doctrine/new\\_pubs/jp3\\_29.pdf](http://www.dtic.mil/doctrine/new_pubs/jp3_29.pdf)

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