

**Climate Change Response as an Emerging Battlespace in the South China Sea:  
Earning Trust and Credibility through HADR Exercises**



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<b>14. ABSTRACT</b> Climate change offers a unique opportunity for the United States to flex soft power in the SCS. Incorporating climate change resilience and response into its operations with partner nations is an important method for the U.S. to counter China's grip, increase U.S. validity in the region, and strengthen regional organizations. INDOPACOM should actively plan for operations to respond to and combat climate change because it will counter China's influence and grow U.S. influence in the region. Actions to engage in combatting climate change are not just political offshoots secondary to primary objectives. Combatting climate change supports the primary objective of countering China, and is a non-threatening means to develop partner capability. Nesting climate change within the framework of competing for influence in the region both provides opportunities for engagement with SCS claimants who are reticent for closer military cooperation and nests competition with China in a positive and affirmative vision of the free world.					
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## Introduction

Territorial acquisition in the South China Sea, military modernization, thefts of U.S. technology and intellectual property, currency manipulation, Uighur genocide, steel, aluminum, electronics, and clothing tariffs... to this list of flashpoints between the United States and China a new area for competition is emerging: climate change.

Increasingly seen as an asymmetric threat by military powers, climate change and response to climatological, meteorological, agricultural, and human effects of climate change offer opportunities for competition and wielding of U.S. national power against China. U.S. Indo-Pacific Command (INDOPACOM) should view climate change planning and response as a powerful lever of soft power and use it as a means for increasing interoperability with South China Sea (SCS) nations. Specifically, INDOPACOM can leverage climate change as an opportunity to increase joint exercises in Humanitarian Assistance/Disaster Response (HADR)<sup>1</sup> in the SCS that have significant applicability for how we would fight in a war - namely by building the architecture for interoperability, command and control structures, communications platforms, logistics networks, and trust. HADR exercises have lower barriers to entry and pose less risk to participants of disrupting existing economic and trade relationships with China and challenging the status quo overtly while offering many of the same benefits of combat-focused multinational exercises.

### Climate Change as Non-Traditional Threat

Traditional conceptions of national security including the primacy of territorial sovereignty, threats from nuclear and ballistic missiles, and defending natural resources, shifted

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<sup>1</sup> Throughout this paper I will use the traditional term HADR rather than Joint terms. The Joint Forces refer to Foreign Humanitarian Assistance (FHA) and Foreign Disaster Response (FDR) as distinct and separate missions and not HADR. U.S. Office of the Chairman of the Joint Chiefs of Staff, *Foreign Humanitarian Assistance*, Joint Publication (JP) 3-29, Washington D.C.: CJCS, (14 May 2019).

over the previous two decades to incorporate threats to the population.<sup>2</sup> Defense against terrorism and insurgency are now widely accepted as valid uses of military power and a host of new threats to global stability and U.S. national security are entering the defense policy lexicon. Policymakers increasingly see a range of new threats from cyberattacks, viruses, online propaganda, shifting supply chains, and carbon emissions but the ways to think about these threats and respond to them are still largely immature and unclear.<sup>3</sup>

Beginning in the early 2000s, climate change and climate variability caused by man-made carbon emissions into the atmosphere began appearing in national security documents as a destabilizing factor. Increasingly, official government reports refer to climate change as a non-traditional threat to U.S. national security.<sup>4</sup> As worldwide climatological variability increases, storms get stronger, waves higher, droughts more severe, fish stocks less stable, oceans acidify, and seas rise. As the Inspector General of the Department of Defense reports in his report on the top management challenges of 2021, changing climate and the resulting extreme weather events can exacerbate geopolitical unrest as stresses on natural resources undermine the capacity of nations to govern themselves, and increase the chance of conflicts. The results of climate change cause, “forced migration, food insecurity, and the failure of governments to provide for basic

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<sup>2</sup> The idea of human security was first coined by the United Nations Development Program (UNDP) in the 1994 Human Development Report. I’ve found *Terror and Consent* by Phillip Bobbitt exceptionally helpful in understanding the shift from territorial security to human security.

<sup>3</sup> Hillary Clinton, “A National Security Reckoning,” *Foreign Affairs* 99, Iss. 6, (Nov/Dec 2020): 88, <https://search.proquest.com/docview/2452331475>.

<sup>4</sup> In 2007, the CNA Military Advisory Board released a report which argued that climate change is a *1* for instability in some of the most volatile regions of the world, exacerbating risks to U.S. national and regional security interests. Subsequently, climate change was included in the 2008 Quadrennial Defense Review and was seen as a “direct outgrowth” of the CNA report. From Ralph Espach, David Zvijac, and Ronald Filadelfo “Impact of Climate Change on U.S. Military Operations in the Western Pacific,” *MCU Journal 2016 Special Issue Climate Change & Policy* (2016): 99, <https://apps.dtic.mil/dtic/tr/fulltext/u2/1047830.pdf>

needs” which make populations “far more susceptible to extremism, political uprising, and wide-scale destabilization.”<sup>5</sup>

### **Climate Change and the South China Sea Nations**

In the contested South China Sea (SCS), the impacts of climate change are evident. From more powerful typhoons, ocean acidification, sea level rise, and coral reef bleaching with resulting decrease in fishing stocks, climate change is emerging as a prominent issue. In the 2021 survey of ASEAN (Association of Southeast Asia Nations) members, climate change ranked among the top three concerns of the region last year.<sup>6</sup> The effects of climate change are projected to increase over time. The fifth assessment report of the United Nation’s Intergovernmental Panel on Climate Change (IPCC) documents climate change events that will have an impact on the Asia-Pacific region: storm damage, drought, flood damage, and water and food scarcity.<sup>7, 8</sup>

The SCS is of strategic, economic, and geopolitical interest to the United States. Contested maritime claims by SCS claimant countries are coupled with the threats posed by Chinese military expansion. China, Taiwan, Vietnam, Brunei, Malaysia, and the Philippines are the primary SCS claimants.<sup>9</sup> The U.S. views China’s claims as a threat to freedom of navigation, the rule of law, and the U.S.’s ability to operate safely in the region.

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<sup>5</sup> U.S. Department of Defense Inspector General, *Top DoD Management Challenges Fiscal Year 2021* (Washington DC: Department of Defense, 2020), 29, <https://climateandsecurity.org/wp-content/uploads/2020/12/TOP-DOD-MANAGEMENT-CHALLENGES-FISCAL-YEAR-2021.pdf>

<sup>6</sup> 53.7% of Southeast Asians view climate change as a “serious and immediate threat to the well-being of their country”, a slight increase from 52.7% last year. The Philippines and Vietnam – two countries worst hit by extreme weather events in 2020, including super typhoons Goni (Rolly) and Vamco – recorded 85.1% and 70.9% in the number of their respondents as opposed to 65.0% and 61.2% last year. From Sharon Seah, et al., *The State of Southeast Asia 2021: A Survey Report*. (Singapore: ISEAS-Yusof Ishak Institute, 2021), 14, <https://www.iseas.edu.sg/wp-content/uploads/2021/01/The-State-of-SEA-2021-v2.pdf>

<sup>7</sup> Yasuaki Hijioka et al., “Asia,” *Climate Change 2014: Impacts, Adaptation, and Vulnerability, Part B: Regional Aspects* (Cambridge: Cambridge University Press, 2014), 1–5, [http://ipcc-wg2.gov/AR5/images/uploads/WGIIAR5-Chap24\\_FGDall.pdf](http://ipcc-wg2.gov/AR5/images/uploads/WGIIAR5-Chap24_FGDall.pdf).

<sup>8</sup> Espach et al., “Impact of Climate Change on U.S. Military Operations in the Western Pacific,” 91.

<sup>9</sup> See Appendix Figure 6 for a picture of contested claims in the SCS. In the northern part of the sea, China, Taiwan, and Vietnam contest sovereignty of the Paracel Islands; China has occupied them since 1974. In the southern part of the sea, China, Taiwan, and Vietnam claim all of the approximately 200 Spratly Islands, while Brunei, Malaysia,

## **Barriers to Cooperation in the South China Sea and Climate Change Response as a Means to Cooperation**

In the summer of 2020, former Secretary of State Pompeo gave multiple speeches enforcing a harder line towards China. He declared Chinese island-building illegal and highlighted the importance of INDOPACOM's activities.<sup>10</sup> Posturing invites “side taking” by South China Sea nations and the forcing of a binary choice between the United States and China. Given the economic strength, military power, physical proximity, and increasing cultural sway of China, it is increasingly likely that SCS nations would pick an allegiance with China over the United States.<sup>11</sup> This type of “with us or against us” hardline diplomacy risks alienating SCS countries and potentially weakening U.S. influence in the region. Indonesia's Foreign Minister, Retno Marsudi has stated, “ASEAN must always cooperate to maintain our regional peace and stability and not be dragged into the storm of geopolitical tension or be forced to choose sides.” Malaysia's Foreign Minister Hishamuddin Hussein struck a similar note, saying Malaysia must ensure it is not “dragged and trapped” in a political tug of war between great powers.<sup>12</sup>

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and the Philippines, a U.S. treaty ally, claim some of them. Vietnam controls the greatest number. In the eastern part of the sea, China, Taiwan, and the Philippines all claim Scarborough Shoal; China has controlled it since 2012. China's “nine-dash line” and Taiwan's similar “eleven-dash line” overlap with the theoretical 200-nautical-mile (nm) EEZs that five Southeast Asian nations—Brunei, Indonesia, Malaysia, the Philippines, and Vietnam—could claim from their mainland coasts under the 1994 United Nations Convention on the Law of the Sea (UNCLOS). Indonesia also disputes China's assertions of maritime rights near its coast. From U.S. Library of Congress,

Congressional Research Service, *China Primer: South China Sea Disputes* by Ben Dolven, Susan V. Lawrence, and Ronald O'Rourke, IF10607 (Updated February 2, 2021), 1, <https://crsreports.congress.gov/product/pdf/IF/IF10607>

<sup>10</sup> Michael Pompeo, “Communist China and the Free World's Future,” Speech, Richard Nixon Presidential Library and Museum, Yorba Linda, California, 23 July, 2020, <https://www.state.gov/communist-china-and-the-free-worlds-future/>. Edward Wong and Michael Crowley, “US Says Most of China's Claims in South China Sea Are Illegal,” *New York Times*, 13 July 2020, <https://nyti.ms/38T34XF>; Michael Pompeo, “US Imposes Restrictions on Certain PRC State-Owned Enterprises and Executives for Malign Activities in the South China Sea,” Press Statement, U.S. Department of State, 26 August, 2020, <https://www.state.gov/u-s-imposes-restrictions-on-certain-prc-state-owned-enterprises-and-executives-for-malign-activities-in-the-south-china-sea/> as cited in Mary H. Robinson, “Playing the long game in the South China Seas: Long term strategies INDOPACOM can adopt for strategic success” (research paper, U.S. Naval War College, Joint Military Operations Department, Newport, RI, 2020), 15.

<sup>11</sup> Mark Valencia, “Between Scylla and Charibdis: ASEAN and the U.S.-China Contest for the South China Sea,” Center for International Maritime Security, 25 September, 2020, <http://cimsec.org/between-scylla-and-charybdis-asean-and-the-u-s-china-contest-for-the-south-china-sea/45917>.

<sup>12</sup> Valencia, “Between Scylla and Charibdis: ASEAN and the U.S.-China Contest for the South China Sea.”

Another gentler and perhaps more persuasive approach is to use the tools of soft power to influence and forge closer ties with SCS nations that may be more flexible and less subject to shifts in U.S. domestic politics. An as-yet undeveloped tool for soft power diplomacy is climate change and climate change response. For SCS nations eager to maintain neutrality in the great power competition between the U.S. and China, engaging on the global threat of climate change offers the opportunity to avoid side-taking and bypass the thorny regional dilemmas.

Recent polling indicates that most Southeast Asian nations do not care about the U.S.-China rivalry nearly as much as they do about climate change, economic inequality, and societal recovery from the COVID-19 pandemic.<sup>13</sup> Efforts to ameliorate these conditions are both less costly and more cooperative, it “is not just that they constitute a kind of balancing on the cheap but that they encourage other countries to assume greater responsibility for regional security.” As the competition between China and the United States plays out, Southeast Asian nations may be wary to take a side. The United States will do better in advancing regional goals with efforts to contribute in the region that are “complementary without commitment.”<sup>14</sup>

### **U.S. and China Competition**

The United States’ competition with China is multi-pronged. As Kevin Rudd, former Prime Minister of Australia notes, the U.S. and China compete in nearly every domain:

Washington and Beijing [will] continue to compete for strategic and economic influence across the various regions of the world. They [will] keep seeking reciprocal access to each other's markets and [will] still take retaliatory measures when such access was denied. They [will] still compete in foreign investment markets, technology markets, capital markets, and currency markets. *And they [will] likely carry out a global contest for hearts and minds, with Washington stressing the importance of democracy, open economies, and human rights and*

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<sup>13</sup> Seah et al., 7.

<sup>14</sup> Van Jackson, “America’s Indo-Pacific Folly: Adding New Commitments in Asia Will Only Invite Disaster,” *Foreign Affairs*, 12 March 2021, accessed 10 April 2021, <https://www.foreignaffairs.com/articles/asia/2021-03-12/americas-indo-pacific-folly>

*Beijing highlighting its approach to authoritarian capitalism and what it calls "the China development model."*<sup>15</sup>

Given the extent of competition between the U.S. and China, finding ways to build cooperation with SCS claimants and counter the Chinese narrative is of strategic importance. Enhancing partner relationships in the SCS is a key means by which INDOPACOM seeks to counter Chinese influence. Under the Indo-Pacific Maritime Security Initiative started in 2015 and expanded in 2019, the United States seeks to improve the ability of the Philippines, Vietnam, and other Southeast Asian countries to maintain maritime domain awareness (MDA) and patrol their EEZs (Exclusive Economic Zones). The United States “stepped up security cooperation with Japan, Indonesia, Malaysia, the Philippines, Singapore, and Vietnam; undertaken joint patrols in the SCS with other partners, including Japan, India, and Australia; and expressed support for other multilateral actions in the region.”<sup>16</sup> The U.S. approach of strengthening security cooperation and partner relationships is an attempt to counter the strong economic ties that China is developing with SCS nations through the Belt and Road Initiative. This will be an uphill battle. China’s economic grip is strong, “two-thirds of the world’s nations already trade more with China than they do with the United States.”<sup>17</sup>

As the Chairman of the House Armed Services Committee, Representative Adam Smith, noted in a March 2021 hearing on national security challenges and U.S. military activities in the

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<sup>15</sup> Kevin Rudd, "Short of War: How to Keep U.S.-Chinese Confrontation from Ending in Calamity," *Foreign Affairs*, Vol. 100, Iss. 2, (Mar/Apr 2021), <https://login.usnwc.idm.oclc.org/login?url=https%3A%2F%2Fwww.proquest.com%2Fmagazines%2Fshort-war-how-keep-u-s-chinese-confrontation%2Fdocview%2F2492332161%2Fse-2%3Faccountid%3D322>.

<sup>16</sup> U.S. Library of Congress, Congressional Research Service. *China Primer: South China Sea Disputes* by Ben Dolven, Susan V. Lawrence, and Ronald O'Rourke, IF10607 (2021), <https://crsreports.congress.gov/product/pdf/IF/IF10607>

<sup>17</sup> See Appendix Figure 5 for a map showing China's economic strength; Edward Alden, "Trump's Trade Wars, and Now COVID-19, Are Unraveling Trade as We Know It," *World Politics Review*, 18 August 2020. <https://www.worldpoliticsreview.com/articles/28998/the-trump-trade-wars-and-now-covid-19-are-unraveling-trade-as-we-know-it>



Indo-Pacific, “the most important thing we can do is build partnerships in that region.”<sup>18</sup> Robust partnerships are central to U.S. goals. But how can the U.S. build resilient partnerships when SCS nations are reticent to choose between the U.S. and China and are not interested in being pawns in the broader great power competition?

As described previously above, climate change poses a global threat and is a top concern for ASEAN nations. To expand partnerships and gain access, the U.S. should reframe climate change as a primary mission in the SCS. Nesting climate change within the framework of competing for influence in the region both provides opportunities for engagement with SCS claimants who are reticent for closer military cooperation and sets competition with China in a positive and affirmative vision of the free world.<sup>19</sup>

### **HADR Exercises vs. Operations**

In practice, nesting climate change within the framework of regional objectives means enhancing response mechanisms to the effects of climate change. Foreign Humanitarian Assistance (FHA) and Foreign Disaster Relief (FDR) are the military mission sets that most closely align with climate change response.<sup>20</sup> Humanitarian assistance and disaster relief operations are already an important component of INDOPACOM’s workload.<sup>21</sup> In many cases, the military is the only organization able to respond quickly on the scale necessary to natural

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<sup>18</sup> U.S. Congress, House. *National Security Challenges and U.S. Military Activities in the Indo-Pacific*. 117<sup>th</sup> Cong., 1<sup>st</sup> sess., 2021.

<sup>19</sup> In his statement to the HASC on Global Security Challenges and Strategy, Dr. Thomas Wright a Senior Fellow at the Brookings Institution, used that turn of phrase, “Nest competition with China in a positive and affirmative vision of the free world which we will continuously strengthen, work to strengthen and improve.” Thomas Wright, Senior Fellow, The Brookings Institution. “Testimony,” *Global Security Challenges and Strategy*, 117<sup>th</sup> Cong., 1<sup>st</sup> sess. 2021.

<sup>20</sup> JP 3-29. The DOD’s official missions in the Asia-Pacific are to deter aggression, advance regional security cooperation, promote peaceful regional development, and if necessary, respond to crises as well as win the nation’s wars.

<sup>21</sup> Espach et al., “Impact of Climate Change on U.S. Military Operations in the Western Pacific,” 110.

disasters rendered more frequent by climate change.<sup>22</sup> Specifically, INDOPACOM's transport and logistics capabilities are sought after in the initial stages of disasters as the host nation and United Nations build their response network and organization. Importantly, the U.S. Department of State and Office of United States Foreign Disaster Assistance (OFDA) within the United States Agency for International Development (USAID) are the designated U.S. government leads for coordination of foreign disaster response. U.S. military participation in HADR is limited in scope and duration and designed to supplement or complement the efforts of the host nation.<sup>23</sup>

While limited in scope, military airlift often plays a vital role at the outset of HADR operations as the first few days of response are critical in saving lives. Delivering aid and personnel, transporting rescue teams, and providing airborne reconnaissance - specifically airborne ISR and imagery products - are vital capabilities that the military frequently renders. Airlift is one of the easiest means by which a country can support HADR efforts. Also, the level of commitment required for aid delivery alone is low, as sustainment requirements are limited and the footprint of forces can be minimal.<sup>24</sup> Given the importance of rapid transport of supplies and personnel, it is of little surprise that U.S. Air Force assets are the most commonly requested resource for HADR in INDOPACOM seconded by rotary lift, sea-based assets.<sup>25</sup> The military can also provide effective resources in addition to airlift. Although dated, a study conducted in

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<sup>22</sup> Shirley V. Scott and Shahedul Khan, "The Implications of Climate Change for the Military and for Conflict Prevention, Including through Peace Missions," *ASPJ Africa & Francophonie* (3rd Quarter 2016).  
[https://www.airuniversity.af.edu/Portals/10/ASPJ\\_French/journals\\_E/Volume-07\\_Issue-3/scottkhan\\_e.pdf](https://www.airuniversity.af.edu/Portals/10/ASPJ_French/journals_E/Volume-07_Issue-3/scottkhan_e.pdf)

<sup>23</sup> JP 3-29, I-2.

<sup>24</sup> Jennifer D. P. Moroney, Stephanie Pezard, Laurel E. Miller, Jeffrey Engstrom, and Abby Doll, *Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region*, RAND Report (Santa Monica, CA: RAND, 2013), 124,  
[https://www.rand.org/content/dam/rand/pubs/research\\_reports/RR100/RR146/RAND\\_RR146.pdf](https://www.rand.org/content/dam/rand/pubs/research_reports/RR100/RR146/RAND_RR146.pdf)

<sup>25</sup> When referring to rotary lift sea-based assets, I mean a large deck capability. It is not efficient to send a destroyer, "whose only contribution to an HADR operation is a single helicopter. Certainly, helicopters aboard naval surface warships can and do participate in HADR, but often in a trivial manner compared to those aboard aircraft carriers or Landing Helicopter Dock (LHD) ships." From Moroney et al., *Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region*, 127.

2011 noted that the most common requests for HADR missions were cargo capacity, personnel transfer, freshwater production, search and rescue, and medical support.<sup>26</sup> Military to military coordination in a HADR mission typically occurs within a Multinational Coordination Center (MNCC) or Multinational Military Coordination Center (MNMCC). These coordination centers are established to manage tasking and promote the efficient use of foreign military assets.<sup>27</sup>

Between 1991 and 2018, Indo-Pacific Command conducted 29 HADR missions, including the Indian Ocean earthquake and tsunami (2004), the earthquake and tsunami in Japan (2011), and Typhoon Haiyan in the Philippines (2013). Eight of the 29 missions were in the Philippines, the single largest recipient of U.S. military humanitarian and disaster relief. Earthquakes, tsunamis, tropical cyclones accounted for the lion's share of responses followed by three HADR missions in response to widespread flooding.<sup>28</sup> In the future, we can expect HADR missions will be greater portion of actual operations due to increasing climate variability. With regards to resourcing necessary to support HADR response efforts, analysts at the Center for Naval Analysis estimate that even with more intense and frequent storms, floods, droughts, and other weather events, INDOPACOM's current resources and capabilities for supporting HADR missions are likely to be sufficient.<sup>29</sup>

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<sup>26</sup> Sharon Burke and Francis Gassert, "UPTEMPO: The United States and Natural Disasters in the Pacific," *New America* (2020), <https://www.newamerica.org/resource-security/reports/uptempo-united-states-and-natural-disasters/part-ii-military-humanitarian-and-disaster-relief-response-capacity-in-the-indo-pacific-region/>

<sup>27</sup> The MNCC/MNMCC works with its civilian counterpart, the On-Site Operations Coordination Center (OSOCC) as elements within the broader response effort. The OSOCC or HuMOCC is typically established as soon as possible by the United Nations Disaster Assessment and Coordination (UNDAC) team deployed by United Nations Office for the Coordination of Humanitarian Affairs or by the first arriving international urban search and-rescue team (USAR). For a good discussion on MNCC/MNMCC and OSOCC roles in recent disaster response in the Indo-Pacific, see the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) Case Study No. 8, "Multinational Coordination Centers in the Indo-Pacific: Military-Military Coordination Mechanisms for Disaster Relief." <https://www.cfe-dmha.org/LinkClick.aspx?fileticket=E5f1PC71U84%3d&portalid=0>

<sup>28</sup> Chris Zimmer, "Perspectives on Chinese and American HADR in the Indo-Pac," *Climate Security in Oceania*, accessed 8 May 2021, <http://sites.utexas.edu/climatesecurity/2020/03/08/perspectives-on-chinese-and-american-hadr-in-the-indo-pacific-region/>. Notably Burke and Gassert in "UPTEMPO: The United States and Natural Disasters in the Pacific" have slightly different numbers drawn from the same data as they count 27 events in the same period.

<sup>29</sup> Espach et al., "Impact of Climate Change on U.S. Military Operations in the Western Pacific," 110.

It is important to note the difference between HADR missions and HADR exercises. In research conducted by the RAND corporation on the lessons learned from Indo-Pacific disaster response missions from 2008 to 2011, analysts found that Japan, Pakistan, Indonesia, and Myanmar all faced potential political repercussions, both internally and externally, from FHA missions and were sensitive to HADR as a form of foreign intervention.<sup>30</sup> Foreign aid must always be in support of and with great consideration of the affected country's effort. Additionally, we can expect partner countries that have their own capabilities may seek targeted, rather than large scale, assistance to fill capacity gaps. This concern with FHA as potentially unwanted foreign intervention strengthens the case for INDOPACOM planning and conducting HADR exercises as the exercises offer ways to train partner militaries to conduct their own response efforts while building the networks and connections that enable targeted responses.

INDOPACOM conducts almost 100 exercises annually.<sup>31</sup> Of the SCS claimants, INDOPACOM currently exercises with the Philippines, Malaysia, and to a limited extent, Brunei. Conducting climate change response focused exercises could cast a wider net for participation with fewer barriers to cooperation. HADR exercises are not threatening as they do not have an overt military mission. As discussed by Center for Naval Analysis analysts:

HADR response is a relatively uncontroversial way to develop bilateral ties with regional countries and participate in regional institutions. It is also an area where they can work with the United States without drawing the ire of certain domestic constituencies. In countries such as Indonesia and Malaysia, for example, where domestic currents are critical of the United States for a variety of reasons, there is appreciation for America's ability and willingness to assist in the case of natural disasters and other humanitarian needs.<sup>32 33</sup>

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<sup>30</sup> Moroney et al., *Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region*, 118 – 119.

<sup>31</sup> See Appendix Figure 7 for a list of exercises. Additional information available at <https://www.pacom.mil/>.

<sup>32</sup> Espach et al., "Impact of Climate Change on U.S. Military Operations in the Western Pacific," 107.

<sup>33</sup> Arpita Bhattacharyya and Michael Werz, *Climate Change, Migration, and Conflict in South Asia: Rising Tensions and Policy Options across the Subcontinent* (Washington, DC: Center for American Progress, 2012), [http://cdn.americanprogress.org/wp-content/uploads/2012/11/ClimateMigrationSubContinentReport\\_small.pdf](http://cdn.americanprogress.org/wp-content/uploads/2012/11/ClimateMigrationSubContinentReport_small.pdf).

In addition to developing non-threatening bilateral ties with SCS nations, HADR focused exercises offer the means to strengthen regional institutions, namely ASEAN, and offer a counterpoint to Chinese influence. Specifically, “for Indonesia and Malaysia, founding members of ASEAN, the ability of that institution to offer public goods such as HADR is one way of demonstrating the “centrality” of ASEAN to regional affairs and, by extension, enhancing their own influence.”<sup>34</sup>

### **Benefits of HADR for INDOPACOM**

There are direct benefits for INDOPACOM to support and encourage climate change response efforts in the SCS. Along with the soft power implications of building trust and expanding access, HADR exercises build the architecture for interoperability that is necessary during conflict. HADR exercises require command and control structures, planning processes, communications platforms, logistics networks, and a whole of government approach.

For example, during Typhoon Haiyan Response in 2013, INDOPACOM coordinated relief activities to collect and disseminate information that needed to be shared with the Philippine government, foreign militaries, and NGOs participating in the response effort. Typhoon Haiyan hit the Philippines with sustained wind speeds up to 195 miles per hour. Fourteen million people were affected across nine regions, with over 6000 lives lost and 28,000 injured.<sup>35</sup> The U.S. military response, named “Operation Damayan,” mostly focused on large-scale operations using transport and logistics. Eight days after the storm made landfall, a joint DOD-USAID-UNICEF team helped rebuild Tacloban’s municipal water system restoring water service to 250,000 people. U.S. military aircraft also performed needs and damage assessments

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<sup>34</sup>Espach et al., “Impact of Climate Change on U.S. Military Operations in the Western Pacific,” 107.

<sup>35</sup> Simon Athawes, “Five years on: How Haiyan shocked the world,” *Prevention Web*, 8 Nov 2018, accessed 8 May 2021, <https://www.preventionweb.net/news/view/61777>

with USAID/OFDA staff.<sup>36</sup> Additionally, INDOPACOM increased situational awareness by using a centralized data network (APAN) to share information, which allowed responders immediate updates on events and reduced duplication of efforts.<sup>37</sup> The U.S. Embassy in the Philippines noted that the “fast bilateral teamwork between the Armed Forces of the Philippines and the U.S. military was due to the Visiting Forces Agreement between the two countries. While other countries wanted to respond quickly to the disaster, many had to wait for legal agreements to be worked out for their troops to work in the Philippines.”<sup>38</sup> Existing relationships built by concerted engagement, exercises, and security cooperation, resulted in increased interoperability during a disaster and facilitated effective response. For the people of the Philippines, the U.S. military rapid response reinforced the perception that the U.S. is a long standing and trustworthy partner.<sup>39</sup> Additionally, it was noted throughout the region that the U.S. military, “in addition to being an unmatched fighting force, also brings unmatched logistical capabilities.”<sup>40</sup> Such perceptions and partnerships are vital to advancing U.S. goals in the region.

### **What about China and HADR?**

Notably, China is also an emerging force for HADR. According to INDOPACOM’s Center for Excellence in Disaster Management and Humanitarian Assistance, from 2002 to 2019, China conducted 13 HADR missions within the Indo-Pacific. In comparison, the United States

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<sup>36</sup> Alan Aoki, “USINDOPACOM Foreign Disaster Response in the Indo-Asia-Pacific June 1991 – June 2019,” Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM), accessed 8 May 2021, <https://www.cfe-dmha.org/LinkClick.aspx?fileticket=twwMY081NH8%3d&portalid=0>

<sup>37</sup> USINDOPACOM Report, “PACOM Strengthens Relationships with Allies and Partners Using APAN,” accessed 3 May 2021, <https://community.apan.org/support/m/info/168980/download>

<sup>38</sup> Aoki, “USINDOPACOM Foreign Disaster Response in the Indo-Asia-Pacific June 1991 – June 2019.”

<sup>39</sup> Ambassador Scot Marciel, “Testimony,” Senate, *Assessing the Response to Typhoon Yolanda/Haiyan: Hearing before the Subcommittee on East Asian and Pacific Affairs of the Committee on Foreign Relations*, 113<sup>th</sup> Cong., 1<sup>st</sup> sess., 2013, accessed 09 May 2021, <https://www.govinfo.gov/content/pkg/CHRG-113shrg86354/html/CHRG-113shrg86354.htm>

<sup>40</sup> Ibid.

conducted 29 missions in the same period.<sup>41</sup> Recently, HADR emerged as a mission that China has both the capacity and interest in conducting. In July 2019, China published the white paper *China's National Defense in the New Era*, which outlined a global defense strategy, enumerated China's military contributions in domestic humanitarian and disaster relief missions, and highlighted key foreign disaster assistance missions since Typhoon Haiyan in 2013. According to China, since 2012 it has deployed "950,000 soldiers, 1.41 million militia, 190,000 vehicles and items of equipment, and sortied 26,000 vessels and 820 aircraft, in response to domestic disasters."<sup>42</sup> The white paper "outlines China's intention to create an expeditionary combat force that can conduct "far seas protection" and "strategic projection" as well as highlights its future intentions for the armed forces to be active participants in global humanitarian and disaster relief missions."<sup>43 44</sup>

In an example of HADR's emergence as a Chinese capability, in 2019 China conducted two HADR exercises: Peace Train 2019 with Laos and Mosi 2019 with Russia and South Africa. While HADR exercises were a relatively small portion of the total conducted, two of nineteen as reported by the U.S. Secretary of Defense to Congress in the Secretary's annual report military and security developments involving China, they are assessed as an area of future expansion for the PLA/N.<sup>45</sup>

An astute observer of American actions, U.S. goodwill diplomacy through HADR will not go unnoticed. Given China's growing capacity to conduct these missions and the Chinese

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<sup>41</sup> See Appendix Figures 8 and 9 for details.

<sup>42</sup> Andrew S. Erikson translation, "China's National Defense in the New Era," *The State Council Information Office of the People's Republic of China*, July 2019.

<sup>43</sup> Burke and Gassert, "UPTEMPO: The United States and Natural Disasters in the Pacific."

<sup>44</sup> Erikson, "China's National Defense in the New Era."

<sup>45</sup> U.S. Secretary of Defense, Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020, Washington, D.C., 169. Accessed 8 May 2021. <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>

Communist Party desire to be seen as a responsible power and alternative to the U.S., we should expect Chinese involvement and increasing presence in disaster response missions.<sup>46 47</sup> HADR will likely become, or more likely already is, another area for competition in the SCS. It is time we recognized it as such and prioritize it accordingly.

### **Recommendations for INDOPACOM**

To improve its partnerships, develop trust, and improve interoperability short of military exercises with SCS nations, INDOPACOM must be an efficient and trusted HADR provider and partner. INDOPACOM should focus on SCS claimants who currently are non-participants in bi- and multilateral exercises and on strengthening regional coordination and response mechanisms, namely ASEAN. Remaining mindful of unwanted foreign intervention, the dilemmas posed by ‘side taking,’ and the primacy of improving host nation response capabilities, INDOPACOM should focus on improving efficiency a HADR provider, encouraging international/interagency coordination, and aligning security cooperation activities with regional climate change response and HADR initiatives.

If we want to be good at something, we must practice it. INDOPACOM already has a robust HADR network and resources, but exercises are often conducted with assets that are rotating into theater and may be unfamiliar with the mission. Ensure HADR exercise leaders have experience in previous HADR missions. An excellent opportunity to train our senior officers in HADR is through the participation of senior military leaders in the U.S. Agency for International Development (USAID) Joint Humanitarian Operations Course. Additionally, it is

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<sup>46</sup> Burke and Gassert, “UPTEMPO: The United States and Natural Disasters in the Pacific.”

<sup>47</sup> Chris Zimmer, “Perspectives on Chinese and American HADR in the Indo-Pac,” *Climate Security in Oceania*, University of Texas at Austin (8 March 2020). <http://sites.utexas.edu/climatesecurity/2020/03/08/perspectives-on-chinese-and-american-hadr-in-the-indo-pacific-region/>



important to keep track of HADR expertise. The Department of Defense should explore making HADR a qualification or special skill identifier for individuals with HADR experience.<sup>48</sup>

HADR exercises in INDOPACOM should encourage coordination with the UN, NGOs, interagency, and – most importantly – be based on the demand signal from the host nation. Exercises should stand up the MNCC/MNMCC and practice reporting, tracking, and oversight on both military-military and civil-military channels. Shorter events of two to three days in duration may keep barriers to entry low for SCS nations reticent to stage a larger scale exercise with the United States as well as be able to incorporate NGOs and resource-constrained partners.

Security cooperation is a “primary vehicle to prepare affected countries to respond better to disasters.”<sup>49</sup> It is also an excellent means by which to improve interoperability and facilitate future HADR cooperation. Security cooperation dialogue with SCS nations should include details of HADR response assets, logistics networks, airlift options, and communications platforms. All nations have an interest in safeguarding the wellbeing of their citizens and improving a nation's ability to respond to crises is an excellent means to build goodwill, a precursor to trust and partnership.

### **Conclusion**

Climate change offers a unique opportunity for the United States to flex soft power in the SCS. Incorporating climate change resilience and response into its operations with partner nations is an important method for the U.S. to counter China’s grip, increase U.S. validity in the region, and strengthen regional organizations. INDOPACOM should actively plan for operations

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<sup>48</sup> These lessons learned are drawn with assistance from a larger study of DoD Disaster Relief efforts conducted by the RAND corporation in 2013. Alas, they have not all been implemented and merit revisiting. Moroney et al., *Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region*, 110-118.

<sup>49</sup> Moroney et al., *Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region*, xx.

to respond to and combat climate change because it will counter China's influence and grow U.S. influence in the region. Actions to engage in combatting climate change are not just political offshoots secondary to primary objectives. Combatting climate change supports the primary objective of countering China, is a nonthreatening means to develop partner capability. Nesting climate change within the framework of competing for influence in the region both provides opportunities for engagement with SCS claimants who are reticent for closer military cooperation and nests competition with China in a positive and affirmative vision of the free world.

### APPENDIX

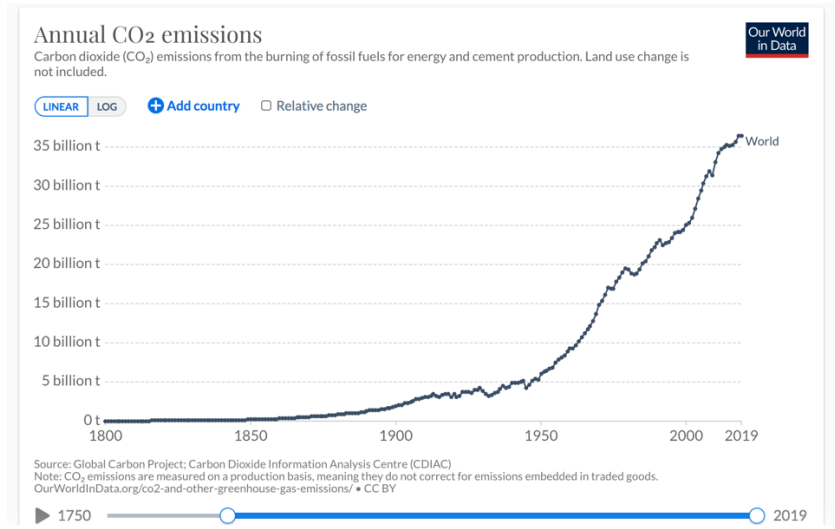


Figure 1: Annual global CO<sub>2</sub> emissions over time from 1800 to 2019. Global CO<sub>2</sub> emissions are rising at an alarming rate. Graph created by the University of Oxford, Oxford Martin Programme on Global Development and the Global Change Data Lab. Accessed 27 April 2021. <https://ourworldindata.org/co2-emissions>

<https://ourworldindata.org/co2-emissions>

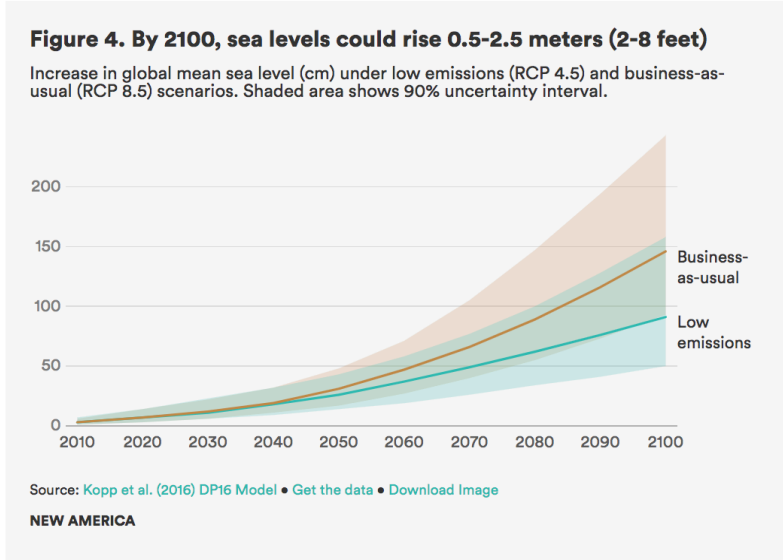


Figure 2: By 2100 sea levels are projected to rise 2-8 feet. Sea level rise will have an outsized impact on low-lying and coastal states. Graph created by New America with 2016 data from the DP16 Model and accessed 27 April 2021. <https://www.newamerica.org/resource-security/reports/uptempo-united-states-and-natural-disasters/graphics-and-data-visualizations>

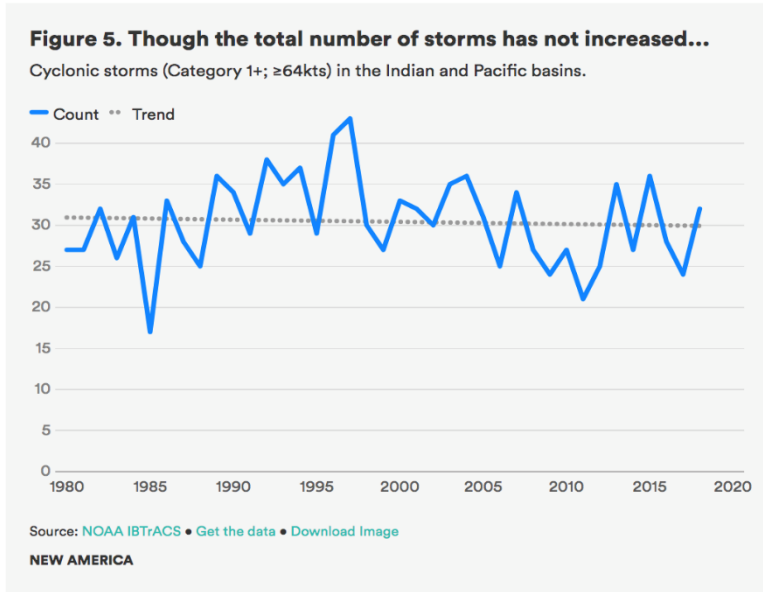


Figure 3: The total number of storms in INDOPACOM Area of Responsibility has remained steady over the past forty years. Graph created by New America using data from NOAA iBTrACS and accessed 27 April 2021. <https://www.newamerica.org/resource-security/reports/uptempo-united-states-and-natural-disasters/graphics-and-data-visualizations>

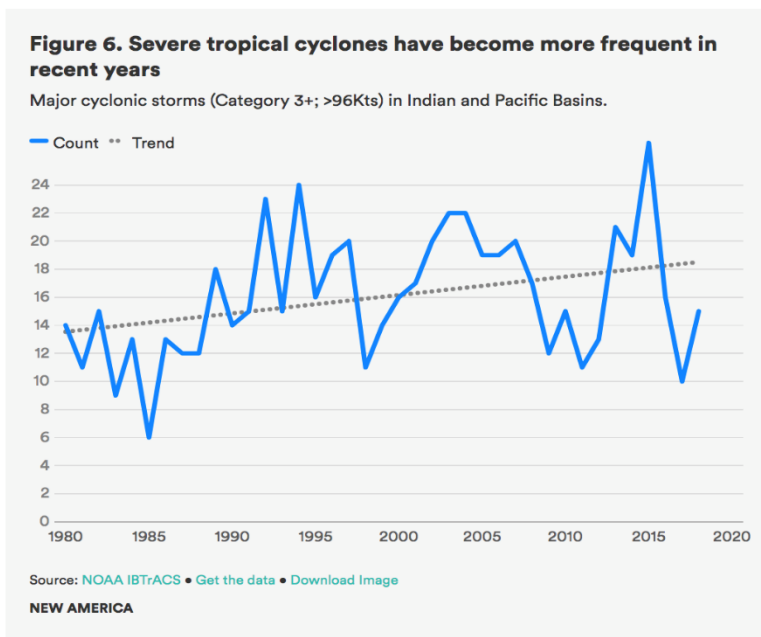


Figure 4: Although the total number of storms is steady (Figure 3), they are more powerful. More tropical cyclones in the Indo-Pacific are severe. Graph created by New America with data from NOAA iBTrACS and accessed 27 April 2021. <https://www.newamerica.org/resource-security/reports/uptempo-united-states-and-natural-disasters/graphics-and-data-visualizations>

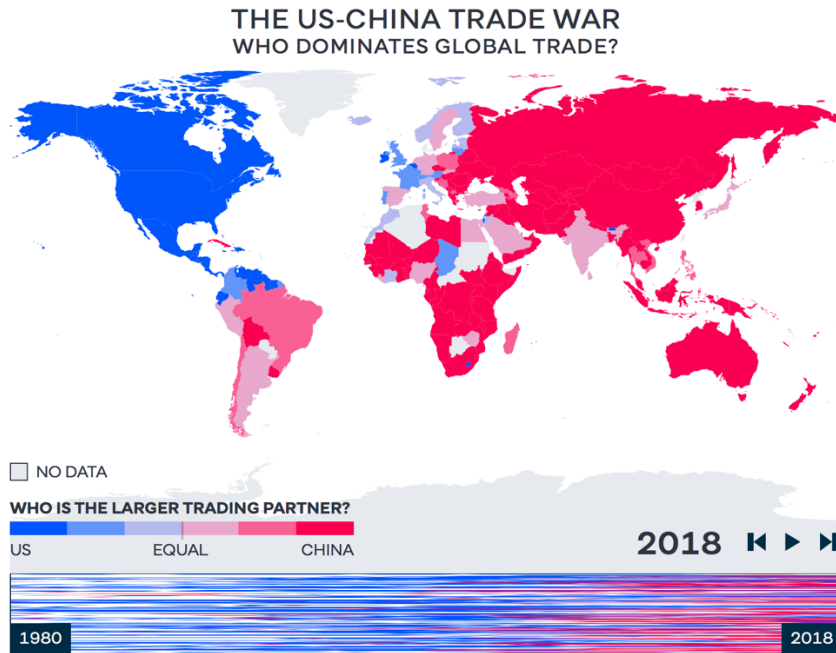


Figure 5: China dominates global trade. This chart shows the relative growth of China in global trade over time from 1980 to 2018. More blue on the chart equates to trade with the United States and red equates to trade with China. Currently, two thirds of countries in the world trade more with China than with the United States. Chart created by the Lowy Institute and accessed 27 April 2021. <https://www.lowyinstitute.org/the-interpreter/chart-week-global-trade-through-us-china-lens>

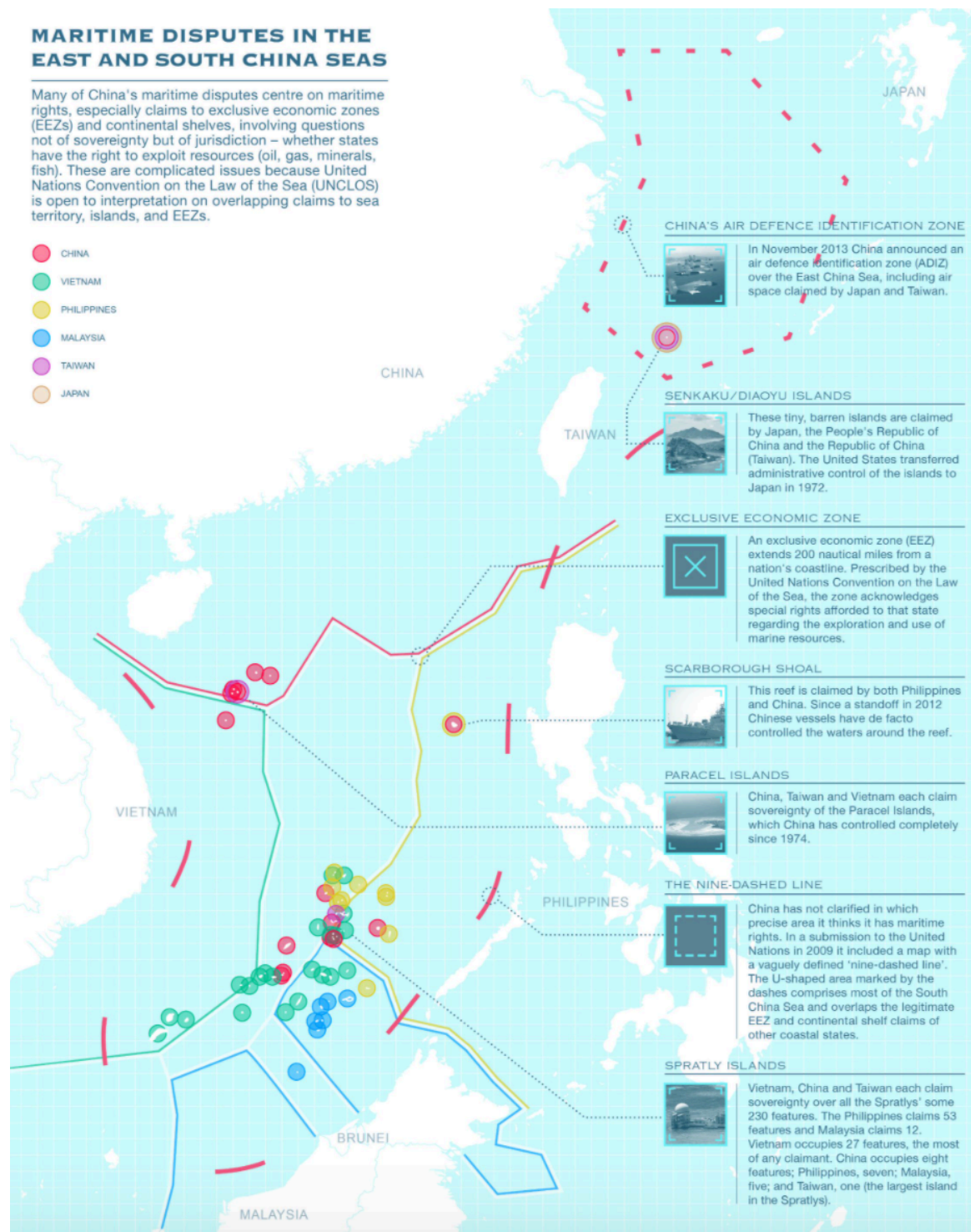


Figure 6: South China Sea contested maritime claims. This map highlights the Indo-Pacific Nations that have competing claims over Exclusive Economic Zones (EEZ) in the SCS: Brunei, Indonesia, Malaysia, the Philippines, Taiwan, and Vietnam. China does not respect or accept the sovereignty claims of any country in this region. Map created by the Lowy Institute and accessed on 27 April 2021. <https://www.lowyinstitute.org/issues/south-china-sea>

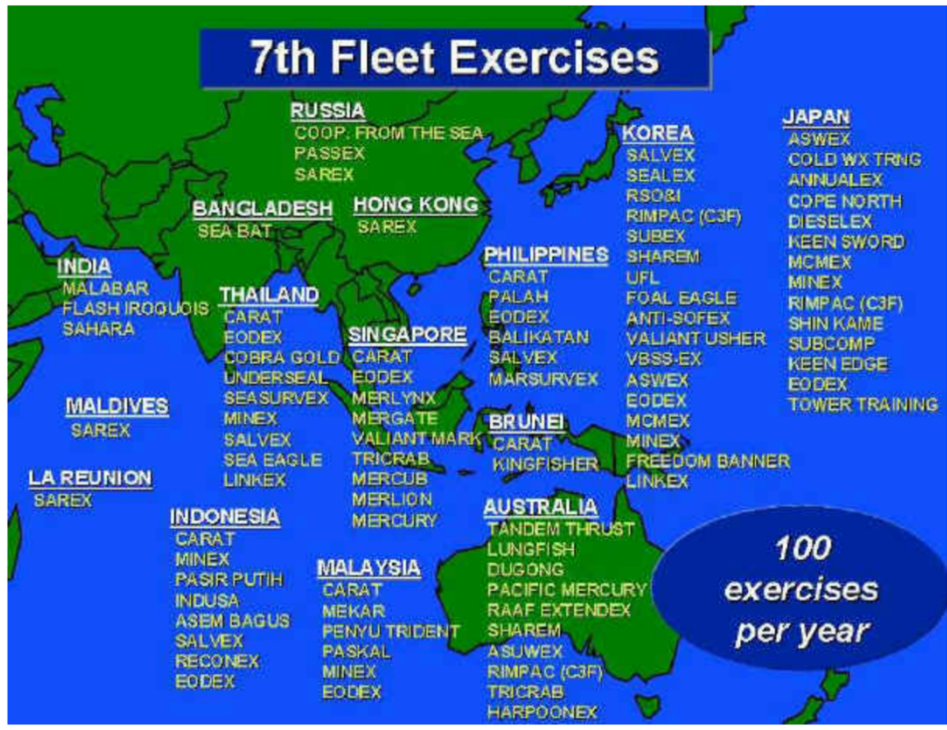


Figure 7: INDOPACOM conducts 100 exercises per year. Slide created by Global Security and accessed 16 April 2021, <https://www.globalsecurity.org/military/ops/ex-pacfleet.htm>

*US Military Responses to Disasters in the Indo-Pacific: 1991-2019*

Country	Year	Reason
Philippines	1991	Volcanic Eruption
Bangladesh	1991	Cyclone
India	2001	Earthquake
Indian Ocean	2004	Tsunami
Pakistan	2005	Earthquake
Philippines	2006	Landslide
Indonesia	2006	Earthquake
Solomon Islands	2007	Tsunami
Bangladesh	2007	Cyclone
Myanmar	2007	Cyclone
China	2008	Earthquake
Philippines	2008	Typhoon
Taiwan	2009	Typhoon
Philippines	2009	Tropical Storm
Indonesia	2009	Earthquake
Philippines	2010	Typhoon
Japan	2011	Tsunami, Nuclear Reactor Crisis
Thailand	2011	Floods
Philippines	2012	Typhoon
Philippines	2013	Typhoon
Malaysia	2014	Aircraft Disappearance
Philippines	2014	Typhoon
Nepal	2015	Earthquake
Myanmar	2015	Refugee Migration
Japan	2016	Earthquake
New Zealand	2016	Earthquake
Sri Lanka	2017	Floods
Thailand	2018	Cave Rescue
Indonesia	2018	Tsunami

Created with information from [CFE-DM](#)

Figure 8: Table of INDOPACOM HADR missions 1991-2019. Table from Chris Zimmer, “Perspectives on Chinese and American HADR in the Indo-Pac,” *Climate Security in Oceania*, University of Texas at Austin (8 March 2020) using data from the Center for Excellence in Disaster Management and Humanitarian Assistance, a direct reporting unit to the U.S. Indo-Pacific Command and principal agency to promote disaster preparedness and societal resiliency in the Asia-Pacific region. Accessed 8 May 2021.

<http://sites.utexas.edu/climatesecurity/2020/03/08/perspectives-on-chinese-and-american-hadr-in-the-indo-pacific-region/>



*Chinese HADR Responses Abroad 2002-2019*

Country	Year	Reason
Afghanistan	2002	Earthquake
Iran	2003	Earthquake
Indonesia	2004	Earthquake
Pakistan	2005	Earthquake
Indonesia	2006	Earthquake
Myanmar	2008	Cyclone
Mongolia	2010	Extreme Weather
Pakistan	2010	Flood
Pakistan	2011	Flood
Thailand	2011	Flood
Japan	2011	Tsunami, Nuclear Reactor Crisis
New Zealand	2011	Earthquake
Philippines	2013	Typhoon
Maldives	2014	Water Shortages
Malaysia	2014	Aircraft Disappearance
Nepal	2015	Earthquake

Created with information from [CFE-DM](#)

Figure 9: Chinese HADR response missions 2002-2019. Of the 16 missions China conducted, 13 were within the Indo-Pacific. The United States conducted 29 HADR missions in the same period. Table from Zimmer, “Perspectives on Chinese and American HADR in the Indo-Pac,” *Climate Security in Oceania*, accessed 8 May 2021, <http://sites.utexas.edu/climatesecurity/2020/03/08/perspectives-on-chinese-and-american-hadr-in-the-indo-pacific-region/>

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