



Introduction

The South Pacific region has been hit by powerful, record-breaking tropical cyclones in recent years, including Tropical Cyclone Pam (TC Pam) in March 2015 and almost one year later, by Tropical Cyclone Winston (TC Winston) in February 2016. Tropical Cyclone Pam was the strongest cyclone on record to make landfall in the South Pacific,¹ while TC Winston was the most severe storm to hit Fiji in recent memory. The strength of the cyclones and extent of the damages caused by the storms necessitated a response by the international community, including by foreign militaries.

Although US Pacific Command (USPACOM) did not respond to this emergency, at least seven foreign militaries assisted relief efforts in Vanuatu in the aftermath of TC Pam and five foreign militaries assisted in Fiji following TC Winston. Most of the foreign military assistance response was from neighboring countries in the region. However, foreign militaries outside the region, such as India and the United Kingdom, contributed to response operations.

This brief case study examines relief efforts during the response to both cyclones, with a focus on the foreign military response. Lessons learned and best practices for future disaster response in the Pacific necessitating the need for foreign military personnel and asset support are reviewed and presented for the reader.

Tropical Cyclone Pam

On the evening of March 13, 2015, Tropical Cyclone Pam (TC Pam) first struck Vanuatu as a powerful Category 5 cyclone.² The storm passed over Vanuatu on March 13 and 14 over central and southern Vanuatu, causing widespread damage across the country. Five provinces were affected: Shefa, Tafea, Malampa, Penama and Torba. At least 23 out of 80 islands sustained damages from the cyclone. Damages were severe and widespread and a significant portion of the population was affected. The Government of Vanuatu (GoV) reported 11 fatalities and 188,000 people (out of a 272,000 total population) were affected by the cyclone. Strong winds and flooding destroyed or damaged homes, buildings, crops and livestock. The eye of the storm passed close to the capital, Port Vila, with winds around 250 km/hr and gusts at 320 km/hr.³ A estimated 65,000 people were displaced from their homes and roughly 17,000 buildings were damaged or destroyed including houses, schools, clinics, and medical facilities.⁴

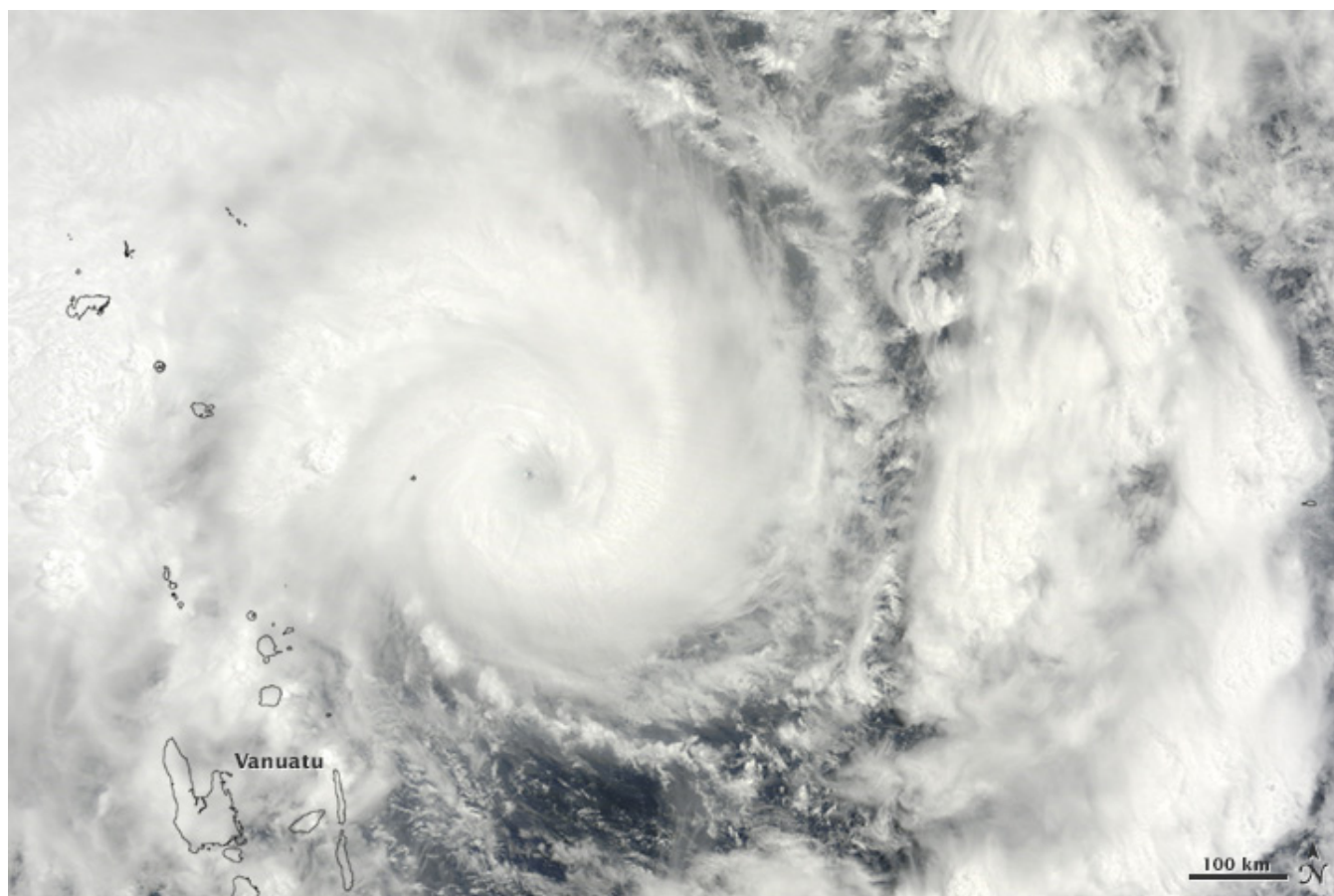
1 Vanuatu: Six Months after Cyclone Pam, September 30, 2015, World Bank, <http://www.worldbank.org/en/news/infographic/2015/09/30/vanuatu-six-months-after-cyclone-pam>

2 For more information on Hurricane categories, see: Saffir-Simpson Hurricane Wind Scale, <https://www.nhc.noaa.gov/aboutsshws.php?>

3 Vanuatu: Severe Tropical Cyclone Pam Situation report No.1 (as of 15 March 2015), https://reliefweb.int/sites/reliefweb.int/files/resources/OCHA_VUT_TCPam_Sitrep1_20150310.pdf

4 Vanuatu: Post-Disaster Needs Assessment, Tropical Cyclone Pam, March 2015, Government of Vanuatu

Up to 70 percent of health facilities had sustained damages or were destroyed and more than half of primary and secondary schools were damaged or destroyed.⁵ Initial damage estimates put more than half the country's population requiring emergency food assistance, around 40 percent requiring drinking water and nearly a third requiring emergency shelter.⁶



NASA's Terra satellite captured this image of Cyclone Pam on March 11, 2015 (22:50 UTC) as it neared Vanuatu.

Photo credit: NASA.

Source: *Three Cyclones Churn off Australia, March 11, 2015*, <https://earthobservatory.nasa.gov/images/85482>

Aid officials have said the storm was comparable in strength to Super Typhoon Haiyan which hit the Philippines in 2013 as a Category 5 typhoon.⁷ However, despite the severity of the disaster, according to UNOCHA, early warning systems and the provision of evacuation centers by the Government of Vanuatu, prevented a higher death toll.⁸

Following the devastation from TC Pam, the Government declared a State of Emergency. The devastation from Pam was such that it was the first time that the GoV issued its first ever generalized appeal for international assistance.⁹

5 Tropical Cyclone Pam Humanitarian Action Plan, https://reliefweb.int/sites/reliefweb.int/files/resources/vanuatu_tc_pam_hap.pdf

6 UN OCHA, Flash Appeal Emergency Response Plan for Vanuatu, Tropical Cyclone Pam, March-June 2015 (March 2015), <https://reliefweb.int/report/vanuatu/flash-appeal-emergency-response-plan-vanuatu-tropical-cyclone-pam-march-june-2015>

7 Tropical Cyclone Pam: Aid from Australia and New Zealand arrives in Vanuatu after devastating storm, <http://www.abc.net.au/news/2015-03-15/cyclone-pam-aid-begins-to-arrive-storm-battered-vanuatu/6321280>

8 TC Pam Anniversary – Vanuatu, TC Winston -Fiji https://reliefweb.int/sites/reliefweb.int/files/resources/tc_pam_anniversary_0.pdf

9 One Size Doesn't Fit All: Tailoring the International Response to the National Need Following Vanuatu's Cyclone Pam," June 2015, <https://reliefweb.int/report/vanuatu/one-size-doesn-t-fit-all-tailoring-international-response-national-need-following>

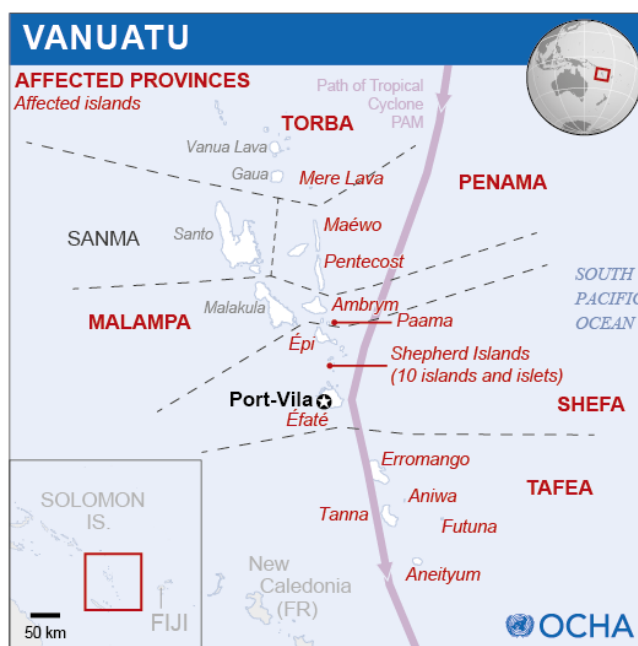
The President of Vanuatu, Lonsdale Baldwin, was in Japan for the Third UN World Conference on Disaster Risk Reduction in Sendai, when TC Pam struck, and issued an appeal for international assistance: “This monster cyclone Pam is the worst ever to hit our country. We are a resilient hard working people but this is a heavy burden to bear. It is a major setback to our plans for the development of our country. We will need assistance to meet the humanitarian needs of the people. Hundreds have lost their homes. Roads and bridges have been washed away. The airport is damaged. Schools and health facilities will have to be rehabilitated. It will be like starting over again in many ways.”¹⁰

Economic damages were severe. The Government of Vanuatu and the World Bank Group’s Post Disaster Needs Assessment, estimated total damage at around US\$600 million--or a whopping 64 percent of GDP.¹¹

The livelihoods of at least 80 percent of the rural population was also affected.¹² The Food Security and Agriculture Cluster estimated on March 31, 2015 that TC Pam had destroyed up to 96 percent of “Vanuatu’s food crops, as well as food gardens, coconut and banana plantations, and livestock.”¹³

Vanuatu was not the only country affected by the storm. Other countries affected included:

- **Kiribati:** (4,000 people affected)
- **Papua New Guinea:** (10,750 affected)¹⁴
- **Solomon Islands:** (More than 30,000 affected)
- **Tuvalu:** (4,600 affected, roughly half the total population).¹⁵ Tuvalu had declared a State of Emergency on March 13 due to the effects of storm surges.¹⁶



Map Sources: ESRI, Gov't. of USA, UNCS, GoV Land Department, UNISYS
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Map created in Mar 2015.

Map credit: UNOCHA

Source: Vanuatu: Tropical Cyclone Pam Situation Report No. 9 (as of 23 March 2015), https://reliefweb.int/sites/reliefweb.int/files/resources/OCHA_VUT_TCPam_Sitrep9_20150323.pdf

Vanuatu’s overall disaster risk

The Pacific is already one of the most natural-disaster prone regions and during 2015, Vanuatu was considered to be the most natural disaster prone country in the world, according to the UN University’s “World Risk Report.” It had also been ranked as the world’s most disaster prone country the previous

¹⁰ Vanuatu President fears the worst, <https://www.unisdr.org/archive/43128>

¹¹ Vanuatu: Post-Disaster Needs Assessment, Tropical Cyclone Pam, March 2015, Government of Vanuatu

¹² Vanuatu: Post-Disaster Needs Assessment, Tropical Cyclone Pam, March 2015, Government of Vanuatu

¹³ South Pacific - Tropical Cyclone Pam Fact Sheet #3, Fiscal Year (FY) 2015, US Agency for International Development (USAID), <https://reliefweb.int/report/vanuatu/south-pacific-tropical-cyclone-pam-fact-sheet-3-fiscal-year-fy-2015>

¹⁴ Pacific: Tropical Cyclone Pam International appeal n° MDR55001 Operations update n° 2, IFRC, https://reliefweb.int/sites/reliefweb.int/files/resources/MDR55001_OU2_0.pdf

¹⁵ South Pacific - Tropical Cyclone Pam Fact Sheet #3, Fiscal Year (FY) 2015, US Agency for International Development (USAID), <https://reliefweb.int/report/vanuatu/south-pacific-tropical-cyclone-pam-fact-sheet-3-fiscal-year-fy-2015>

¹⁶ South Pacific - Tropical Cyclone Pam Fact Sheet #3, Fiscal Year (FY) 2015, US Agency for International Development (USAID), <https://reliefweb.int/report/vanuatu/south-pacific-tropical-cyclone-pam-fact-sheet-3-fiscal-year-fy-2015>

four years as well. To arrive at this, authors of the World Risk Report look at the number of citizens potentially exposed to natural hazards, and multiply that by overall “vulnerability” - an average based on susceptibility, lack of coping capacities and a lack of adaptive capacities.¹⁷ Additionally, the country is located within the so-called Pacific “Ring of Fire,” an area of concentrated seismic activity and active volcanoes. Some 90 percent of all earthquakes occur along this area; additionally, the Ring of Fire contains some 75 percent of all active volcanoes on earth.¹⁸ Vanuatu is also experiencing the effects of climate change and sea level rise.

In general, the primary hazards to affect Vanuatu include cyclones, earthquakes, tsunamis, landslides, urban floods, coastal floods, volcanoes and extreme heat.¹⁹

According to the Global Facility for Disaster Reduction and Recovery (GFDRR), Vanuatu is estimated to incur an average of US\$48 million per year in losses due to earthquakes and tropical cyclones, a figure that is equivalent to 6.6 percent of its GDP.²⁰

Risk to cyclones

Aside from its location on the ring of fire, Vanuatu also resides at the center of the so-called “Pacific cyclone belt.” According to Fiji’s National Disaster Management Office (NDMO) the cyclone belt is where cyclones usually develop in the South Pacific around the warmer waters close to the equator at around 5 degrees. Cyclone activity in the region dies down when it reaches colder waters around 25 degrees south of the equator.²¹ Vanuatu has been affected by several devastating cyclones during its history including TC Uma in 1987 and TC Ivy in 2004. According to the report, “Current and Future Tropical Cyclone Risk in the South Pacific, Country Risk Profile: Vanuatu,” the current climate average annual loss due to tropical cyclones represents about 5% of the country’s GDP. Future climate projections indicate that there will be a notable increase in future losses from tropical cyclones compared to the current climate. Average annual losses are projected to increase from US\$36.8 million to US\$37.9 million by mid-century and to US\$39.6 million by end-of-century, an increase of 3% and 7.6%, respectively.²² The report goes on to say that the proportion of the population affected by future cyclones is expected to increase and maximum wind speeds are projected to increase slightly by the end of the century. The official tropical cyclone season runs from approximately November 1 to April 30.²³

17 Vanuatu Tropical Cyclone Pam Situation Report No. 1,

18 Ring of Fire, <https://www.nationalgeographic.org/encyclopedia/ring-of-fire/>

19 “Vanuatu,” Global Facility for Disaster Reduction and Recovery (GFDRR), <https://www.gfdr.org/vanuatu>

20 Ibid.

21 Fiji National Disaster Management Office, <http://www.ndmo.gov.fj/index.php/2016-12-16-03-10-44/know-your-hazards>

22 Current and Future Tropical Cyclone Risk in the South Pacific, Country Risk Profile: Vanuatu https://www.pacificclimatechange.net/sites/default/files/PCRAFI_country-risk-profile_Vanuatu.pdf

23 Tropical Cyclone Winston causes devastation in Fiji
<https://public.wmo.int/en/media/news/tropical-cyclone-winston-causes-devastation-fiji>

National and International Response Efforts

Government of Vanuatu (GoV) Response

National and international response for TC Pam and TC Winston in the following section will not be discussed in-depth for the purposes of this case study, however, it is important to be familiar with some of the response efforts from both the affected country and from the international community. Efforts from the GoV and the international humanitarian community are therefore discussed briefly in the next few paragraphs.

The Government of Vanuatu led the response through the National Disaster Management Office (NDMO) which activated the National Emergency Operations Center (NEOC). The NDMO was the GoV focal point for leading coordination efforts both domestically and internationally for relief operations.

The Vanuatu Humanitarian Team (VHT) helped support the GoV. The VHT is a partnership between Vanuatu-based NGOs, the Red Cross, and United Nations (UN) and government agencies. Specifically, the VHT is convened by Oxfam; its members include the Vanuatu Red Cross, French Red Cross, Vanuatu Association of NGOs (VANGO), UNICEF, Oxfam, CARE International, Save the Children Australia (SCA), the Adventist Development and Relief Agency (ADRA), the World Health Organization (WHO), Peace Corps, World Vision and Act for Peace, International Organization for Migration (IOM) and the UN Office for the Coordination of Humanitarian Affairs (OCHA).²⁴

The VHT assisted the NDMO to coordinate and collaborate with the Pacific Humanitarian Team (PHT). The PHT assumed a coordination role with the NDMO to facilitate international and regional support.²⁵ (See next section for more information on the PHT)

Generally speaking, during a disaster response, an UN-organized cluster system is often utilized to coordinate response by sector. In the Vanuatu cluster system, GoV ministries act as cluster leads with members of the VHT taking the role of co-lead of five clusters. The clusters were Shelter, Health and Nutrition, Water, Sanitation and Hygiene (WASH), Food Security & Agriculture, Logistics, Protection, Education and Early Recovery and Livelihoods.^{26 27} The cluster coordination mechanism was adopted by Vanuatu in 2011.

International Response

As part of the immediate international response to TC Pam, an 11-person UN Disaster Assessment and Coordination (UNDAC) team was sent along with three staff members from UN OCHA's Regional

²⁴ Vanuatu: Humanitarian Action Plan, https://reliefweb.int/sites/reliefweb.int/files/resources/vanuatu_tc_pam_hap.pdf

²⁵ Tropical Cyclone Pam Lessons Learned Workshop Report - June 2015, <https://reliefweb.int/report/vanuatu/tropical-cyclone-pam-lessons-learned-workshop-report-june-2015>

²⁶ Vanuatu Tropical Cyclone Pam Situation Report No. 1, https://reliefweb.int/sites/reliefweb.int/files/resources/OCHA_VUT_TCPam_Sitrep1_20150310.pdf

²⁷ Tropical Cyclone Pam Humanitarian Action Plan, https://reliefweb.int/sites/reliefweb.int/files/resources/vanuatu_tc_pam_hap.pdf

Office for the Pacific (ROP), to help coordinate incoming international assistance.²⁸

An UNDAC team is designed to assist the UN and Governments of a disaster-affected country during the first phase of a sudden-onset emergency, as well as in the coordination of incoming international relief. It is capable of deploying within 24-48 hours globally. The UNDAC is managed by the Field Coordination Support Section (FCSS) in the Emergency Services Branch of OCHA Geneva. The global UNDAC system comprises five regional teams, including one for the Asia-Pacific.²⁹

Pacific Humanitarian Team (PHT) partners also deployed to help the response. The PHT, established by OCHA in 2008, is based in Suva, Fiji and helps coordinate disaster response resources regionally and globally. The PHT is a network of organizations that work together to assist Pacific countries in preparing and responding to disasters. PHT partners include the UN Office for the Coordination of Humanitarian Affairs (OCHA), the International Federation of the Red Cross and Red Crescent Societies (IFRC), UNICEF, UNHCR, and other NGOs. These organizations supported the cluster areas of shelter, WASH and protection, among other areas, during the response to TC Pam.³⁰

Additionally, as part of the international response to the cyclone, over 20 Foreign Medical Teams (FMTs) with 140 international staff augmented the capacities of the Ministry of Health during the first month in delivering direct health assistance and treating almost 9,700 patients.³¹

Military response

Vanuatu security forces

While Vanuatu does not have a standing armed force, it does have the Vanuatu Mobile Force (VMF) whose primary role is to assist the Vanuatu Police Force (VPF) to maintain law and order when there is no external threat to the country. According to the VPF website, the secondary role of the VMF is to provide a first line defense when an external threat exists. The VMF is expected to also assist with the following tasks regarding disaster management: land based search and rescue, and disaster relief operations. The VMF considers its defense partners to include the U.S., Australia, New Zealand, France, China and the Melanesian Spearhead Group (MSG) countries.³² Part of Australia's engagement with the VMF includes "Exercise Vanuatu Alliance" which in part provides training for humanitarian and disaster relief operations.^{33 34}

Additionally, the Police Maritime Wing (PMW) also helps to assist with disaster relief and medical evacuation (Medevac) and maritime search and rescue.³⁵

28 Vanuatu Tropical Cyclone Pam Situation Report No. 2, https://reliefweb.int/sites/reliefweb.int/files/resources/OCHA_VUT_TCPam_Sitrep2_20150317.pdf

29 Field Coordination Support Section (FCSS) United Nations Disaster and Coordination Assessment (UNDAC) Team, Informative Note – October 2014, https://www.unocha.org/sites/unocha/files/dms/Documents/UNDAC%20Concept%20Paper_LAST%20VERSION_Oct2014.pdf

30 Pacific Humanitarian Team Responding to Cyclone Pam, <https://reliefweb.int/sites/reliefweb.int/files/resources/PACIFIC%20HUMANITARIAN%20TEAM%20RESPONDING%20TO%20CYCLONE%20PAM.pdf>

31 Tropical Cyclone Pam Humanitarian Action Plan, https://reliefweb.int/sites/reliefweb.int/files/resources/vanuatu_tc_pam_hap.pdf

32 The MSG originated in May 2008 and is a regional grouping comprised of Papua New Guinea, Solomon Islands, Vanuatu, Fiji and a representative of the Kanak Socialist National Liberation Front (*FLNKS). Source: Melanesian Spearhead Group Secretariat, <http://www.msgsec.info/Melanesian>

33 Vanuatu Mobile Force – VMF, <https://police.gov.vu/about-us/vanuatu-mobile-force>

34 Vanuatu Mobile Force (VMF), <https://www.globalsecurity.org/military/world/oceania/vanuatu-vmf.htm>

35 Police Maritime Wing – PMW, <https://police.gov.vu/about-us/police-maritime-wing>

The VMF and Vanuatu Police assisted the GoV in relief operations in response to the devastation caused by TC Pam. The NDMO used the Cook Barracks of the VMF camp to help store relief supplies.³⁶

Foreign military response

One of the first actions to be carried out by foreign militaries were aerial assessments of the damage from TC Pam. Assessments were quickly carried out by military aircraft from New Caledonia (France), Australia and New Zealand to assist the GoV with coordination efforts.³⁷

In addition, Australia, Fiji, France, New Zealand, Solomon Islands, Tonga and the United Kingdom (UK) sent military assets which, with the support provided by the Vanuatu Mobile Force and Police Patrol Boat, proved critical in the initial response phases. The Logistics Cluster processed 103 requests to use those assets from more than 20 humanitarian organizations.³⁸

As mentioned earlier, USPACOM was not asked to support the U.S. Government's (USG) response efforts in assisting the GoV. USG efforts will be discussed in further detail in a section below. The following is the list of countries that provided military support to response efforts as well as a list of military assets provided:

Australia – “Operation Pacific Assist 2015”

Military assets used:

- HMAS Tobruk (heavy landing ship)
- With MRH-90 helicopter
- 2 landing craft
- Engineers for reconstruction
- C-130 airplane
- C17 aircraft
- 2 Kingair B350 aircraft
- AP-3C Orion patrol aircraft
- 3 Blackhawk helicopters³⁹

Operation summary (from the Australian Department of Defence's report: “Operation Pacific Assist 2015”):

The Australian Defence Force's (ADF's) operation to assist Vanuatu in the aftermath of TC Pam was dubbed “Operation Pacific Assist 2015.” More than 500 soldiers, sailors, and aircrew deployed to assist Vanuatu. Aside from the delivery of 115 tons of humanitarian aid, ADF forces helped repair key infrastructure and restore basic services in the country.

³⁶ The devastation of Tropical Cyclone Pam, http://dailypost.vu/news/the-devastation-of-tropical-cyclone-pam/article_e7ea51f0-3e4f-5b74-b72f-7d8e7c-3dece0.html

³⁷ Vanuatu Tropical Cyclone Pam Situation Report No. 1,

³⁸ “Tropical Cyclone Pam Humanitarian Action Plan,” https://reliefweb.int/sites/reliefweb.int/files/resources/vanuatu_tc_pam_hap.pdf

³⁹ Vanuatu: Foreign military deployed assets (as of 29 March 2015), <https://reliefweb.int/report/vanuatu/vanuatu-foreign-military-deployed-as-sets-29-march-2015>

Initial efforts included the delivery of Australian aid and emergency personnel using Royal Australian Air Force (RAAF) C-17A Globemaster and C-130J Hercules aircraft while AP-3C Orion maritime patrol aircraft provided reconnaissance support over Vanuatu and the Solomon Islands.

The HMAS Tobruk, an amphibious operations ship, deployed with Army engineers, vehicles, and relief. The Tobruk became the maritime base for much of the response operations in Vanuatu's outer islands. The crew of the Tobruk utilized two LARC-Vs amphibious cargo vehicles, two LCM-8 landing craft and an embarked Navy MRH-90 helicopter.

Army engineers from the 3rd Combat Engineer Regiment assisted in aiding the worst affected southern islands of Tanna and Erromango. On Tanna, engineers restored the water supply to the eight major population centers, and also repaired four medical centers, four churches and 11 schools. On Erromango, engineers joined sailors from the Tobruk in clearing storm damage from Dillon's Bay and Happy Land, as well as cleared routes, conducted infrastructure repairs and delivered aid.

Three Black Hawk helicopters from the 6th Aviation Regiment (Army), helped move supplies to outer islands. In total, the RAAF flew more than 260 sorties. C17-A and C130-J aircraft flew aid and personnel for the ADF, Department of Foreign Affairs and Trade (DFAT) and other agencies, while RAAF KA-350 King Air tactical aircraft provided transport between islands.⁴⁰

Fiji

Military assets used:

- 35 military personnel
- 15 medical personnel⁴¹

France

Military assets used:

- Vendemiaire (Frigate)
- With 2 helicopters (1 Puma, 1 Alouette)
- Patrol Boat La Glorieuse
- 2 CASA aircraft (operated between Port Vila, Tanna, and Noumea)⁴²

Operation summary (from the French Embassy in Port-Vila):

The French Armed Forces in New Caledonia (FANC) and the French Armed Forces of French Polynesia (FAPF) assisted the Government of Vanuatu with rescue operations and in the repair of infrastructures



Elements of the 3rd Combat Engineer Regiment (3CER) embarked in the Royal Australian Navy's heavy-lift ship, HMAS Tobruk, to provide assistance to Vanuatu.

Photo credit: Australian Defence Force (ADF)

Source: "Army engineers arrive in Vanuatu," <https://www.army.gov.au/media-room/media-releases/army-engineers-arrive-in-vanuatu>

⁴⁰ Operation Pacific Assist 2015, Australian Government Department of Defense, <http://www.defence.gov.au/Operations/Vanuatu/>

⁴¹ Vanuatu: Foreign military deployed assets (as of 29 March 2015), [https://reliefweb.int/report/vanuatu/vanuatu-foreign-military-deployed-as-](https://reliefweb.int/report/vanuatu/vanuatu-foreign-military-deployed-assets-29-march-2015)

⁴² Ibid.

affected by TC Pam. Response efforts were in coordination with the French Embassy in Vanuatu, the GoV, NGOs, and emergency response teams from New Caledonia and French Polynesia. Relief efforts began on March 15, 2015 and around 300 French soldiers participated in relief operations. On March 15, a team from FANC arrived in Port Vila and undertook an initial assessment with GoV officials and FRANZ partners (France, Australia and New Zealand. For more information see “FRANZ Arrangement” below). A Gardian plane carried out aerial reconnaissance of the islands of Tafea province in the south of Vanuatu. Several teams of emergency response experts arrived from French Polynesia and New Caledonia and were based in Tanna Island and began working with the Red Cross. Eight people were medically evacuated from Tanna to Port Vila hospital and 10 French tourists were evacuated to Noumea on military planes.

France directed its main assistance to Tafea province, particularly in North Tanna and Erromango. Military teams brought equipment for road clearing and freight transport and helped transport aid experts using 4WD vehicles and two helicopters (Puma and Alouette III).

The military and civilian teams on the ground in Tanna helped open access to drinking water sources. They also worked to consolidate and rehabilitate damaged buildings, such as Lowanatom College and helped secure Lenakel airport. French Armed Forces also helped evacuate eight wounded from Tanna to Port Vila.

Casa planes from FANC and FAPF also carried into Vanuatu around 120 people, including more than 80 civilians, and 41 tons of cargo. The Frigate Vendemaire and the patrol boat La Glorieuse delivered 8 tons of cargo on Tanna for the Red Cross and the NGO, Solidarité Tanna. Humanitarian supplies were also delivered to Futuna Island.⁴³

New Zealand – “Operation Pacific Relief”:

Military assets used:

- HMNZS Canterbury (multi-role vessel)
- C130H air plane
- Kingair B200 Aircraft
- 2 Seasprite helicopters

Operation Summary (from the NZDF):

In total more than 350 NZDF personnel assisted with the response, dubbed, “Operation Pacific Relief,” both in Vanuatu and in New Zealand.

The HMNZS Canterbury, which deployed on March 23, delivered some 150 tons of supplies for food and shelter clusters which included water containers, water tanks, chainsaws, jerry cans, generators, electrical supplies, plumbing materials and building supplies.⁴⁴

⁴³ Tropical Cyclone Pam – French assistance in Tafea province, <https://vu.ambafrance.org/Tropical-Cyclone-Pam-French>

⁴⁴ Vanuatu: Foreign military deployed assets (as of 29 March 2015), <https://reliefweb.int/report/vanuatu/vanuatu-foreign-military-deployed-assets-29-march-2015>

The NZDF also assisted in Vanuatu by providing:

- A Combined Task Force Headquarters to advise and assist in coordinating the response
- C-130 flights for deliveries of aid and personnel, the evacuation of New Zealand citizens, injured locals and transport of Fijian military personnel
- Health teams and Army engineers, who carried out damage assessment, clearing debris from roads, repairs to water and sanitation systems, and to critical public infrastructure
- A B200 King Air aircraft which transported officials and reconnaissance teams
- A P-3K2 Orion aircraft which provided aerial reconnaissance
- Air load, passenger and cargo facilitation teams both in New Zealand and Vanuatu.

NZDF lesson learned (Logistics): The post-disaster conditions during the mission meant the NZDF had to improvise away from traditional landing craft operations to get personnel and supplies ashore from the Canterbury. Almost every means was used to get the job done, with the SH-2G Seasprite helicopter and Rigid Hull Inflatable Boats (RHIBs) embarked on the Canterbury providing support. (Source: NZDF)

“The smaller volcanic peak islands make beach access much more difficult,” said the Commanding Officer of HMNZS Canterbury, Commander (CDR) Simon Rooke. “It has been a real joint effort. We have had Navy and Army personnel working together on the islands, with the Air Force-maintained helicopter working alongside the boats moving equipment, supplies and both NZDF and NZ Government officials.”⁴⁵

Solomon Islands

Military assets used:

- Royal Solomon Islands Police Force, Pacific Class Patrol Boat “Auki.”⁴⁶

Tonga

Military assets used:

- Pacific Class Patrol Boat, VOEA “Neaiafu.”⁴⁷

According to UNOCHA, overall the militaries of Australia, New Zealand, France, Solomon Islands and Tonga transported 24 assessment teams (155 people) across 23 islands over five days and assessed 45 locations.

“This joint logistic operation was considered a great success that set a standard to be followed in humanitarian civil-military cooperation in the Pacific region.”

Source: *Operational Civil Military and Humanitarian Coordination in the Pacific,” Health and Humanitarian Action in Emergencies Course, UNOCHA. (PowerPoint presentation*

⁴⁵ HMNZS Canterbury Home from Vanuatu Mission, April 27, 2015, <http://www.nzdf.mil.nz/news/media-releases/2015/20150427-hmnzschfvm.htm>

⁴⁶ Vanuatu: Foreign military deployed assets (as of 29 March 2015), [https://reliefweb.int/report/vanuatu/vanuatu-foreign-military-deployed-as-](https://reliefweb.int/report/vanuatu/vanuatu-foreign-military-deployed-assets-29-march-2015)

⁴⁷ Ibid.

Vanuatu

Military assets used:

- Military Police Patrol Boat “Turoroe”⁴⁸

United Kingdom

Military assets used:

- C17 aircraft transported communications equipment for ADF staff to Port Vila from Brisbane.⁴⁹

FRANZ Arrangement

A discussion of disaster response in the Pacific region would not be complete without discussing the important role of FRANZ Arrangement partners in disaster response in the region.

The FRANZ Arrangement is a trilateral agreement between France, Australia and New Zealand, signed in December 1992. FRANZ is a civilian-led arrangement that is supported by defense forces of the three nations. Under the Arrangement the three countries coordinate disaster reconnaissance and relief assistance in the Pacific when requested by partner countries. There are 12 partner countries and territories in the South Pacific. Partner countries and Territories in the South Pacific include: Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu.

FRANZ Partners coordinate disaster response with the affected countries and with the Pacific Humanitarian Team, which includes humanitarian and development partners from the U.N., the Red Cross and Red Crescent Movement and NGOs. Recent coordinated responses under the FRANZ Arrangement include the response to Cyclone Winston, which hit Fiji in February 2016 (and discussed later in this paper) and Cyclone Ian, which struck Tonga in January 2014. Other recent coordinated responses included the response to Cyclone Evan in December 2012 which affected a number of Pacific countries, including Samoa and Fiji; In October 2011 FRANZ partners worked to alleviate a severe water shortage in Tuvalu, and in September 2009, FRANZ partners responded to a tsunami which affected a number of countries including Samoa and Tonga.

Source: “The FRANZ Arrangement,” <https://www.mfat.govt.nz/assets/Aid-Prog-docs/NZDRP-docs/Franz-Arrangement-Brochure.pdf>

United States Government (USG) Response to TC Pam

Although United States Pacific Command (USPACOM) was not asked to support the USG response to the disaster, USG agencies provided support to the Government of Vanuatu and overall relief efforts. As Cyclone Pam developed into a powerful storm, the United States Agency for International Development (USAID)/Office of Foreign Disaster Assistance (OFDA), the lead U.S. federal agency for foreign disaster response, deployed personnel forward in preparation for a potential response. Two USAID/OFDA regional advisors were deployed to Vanuatu to assess conditions and help coordinate USG response in collaboration with interagency staff and other humanitarian actors.⁵⁰

The USG declared disasters in Vanuatu, the Solomon Islands, Tuvalu and Kiribati due to the effects of TC Pam and in order to release USG funds for humanitarian assistance. U.S. Ambassador to Papua New Guinea, Solomon Islands, and Vanuatu Walter North declared a disaster in Vanuatu on March 14. This was followed by the Ambassadors and Charge d’ Affaires for Tuvalu, Solomon Islands and Kiribati also issuing disaster declarations for Tuvalu, the Solomon Islands, and Kiribati.⁵¹

⁴⁸ Ibid.

⁴⁹ Ibid.

⁵⁰ South Pacific – Tropical Cyclone Pam, Fact Sheet #3, Fiscal Year (FY) 2015, https://www.usaid.gov/sites/default/files/documents/1866/tropical_cyclone_pam_fs03_04-13-2015.pdf

⁵¹ Ibid.

In immediate response, and part of the immediate release of U.S. funds, USAID/OFDA provided US\$100,000 to the French Red Cross for emergency relief supplies, water, sanitation, and hygiene (WASH) assistance in evacuation centers and to support evacuees. In Tuvalu, Solomon Islands and Kiribati, USAID/OFDA also released US\$50,000 to each country to support response efforts.⁵²

As of the last update (April 13, 2015), USAID provided almost US\$2.2 million for humanitarian assistance in Vanuatu, Tuvalu, Solomon Islands and Kiribati. The funds supported distribution of emergency relief, distribution of food, shelter materials, WASH activities and logistics support for humanitarian organizations.⁵³

Of the funds, USAID/Food for Peace program (FFP) contributed US\$1 million to support WFP's Emergency Operation (EMOP) to support the food needs of 57,000 affected. In addition, USAID/OFDA provided an additional US\$250,000 logistics capacity and coordination. USAID/OFDA also provided US\$776,700 to CARE International, French Red Cross (FRC) and World Vision for emergency relief supplies and other humanitarian aid. The USAID FFP program aims to reduce hunger and malnutrition and provides emergency food assistance to those affected by natural disasters and conflict.⁵⁴

Discussion: Military response Lessons Learned

The following section is a select list of disaster response lessons learned for the military responder from relief efforts for TC Pam from a variety of sources.

TC Pam Lessons Learned

In June 2015 the Vanuatu National Disaster Management Office (NDMO), supported by the Pacific Community (SPC) and the European Union (EU) held a workshop to identify lessons learned following the response to TC Pam. Areas discussed included coordination, preparation and response. The following relevant lessons learned are culled from the report from that workshop, titled "*Tropical Cyclone Pam Lessons Learned Workshop Report, June 2015.*"⁵⁵

The response lessons learned are divided by various categories: (Note: Some areas are highlighted in bold for emphasis)

Logistics and Coordination – Civil-Military (Civ-Mil) Deployment:

- **Provincial Civ-Mil Centers:** Develop capacity at provincial level to manage any response involving Civ-Mil operations, specifically, and logistics, generally.

⁵² Ibid.

⁵³ Tropical Cyclone Pam, <https://2012-2017.usaid.gov/crisis/tropical-cyclone-pam>

⁵⁴ United States Gives \$1.4 Million in Assistance to Solomon Islands and Vanuatu, <https://reliefweb.int/report/vanuatu/united-states-gives-14-million-assistance-solomon-islands-and-vanuatu>

⁵⁵ Tropical Cyclone Pam Lessons Learned Workshop Report - June 2015, <https://reliefweb.int/report/vanuatu/tropical-cyclone-pam-lessons-learned-workshop-report-june-2015>

- **Strengthen mechanisms** for coordination and information sharing between Civ-Mil and government agencies.
- **Strict guidelines on the use of military assets** need to be communicated to government to then relay to NGOs and Provincial agencies.
- **GoV Civ-Mil Policy:** Vanuatu Government should have a clear policy/mandate on how to engage with Civ-Mil operations. Any Civ-Mil deployments need to conform to diplomatic channels and protocols.

Regional coordination – donors:

- “...**Lack of knowledge of the existing national coordination system was an issue.** Donor mandates and Government of Vanuatu processes were potentially an issue. The protocols for deployment of donor assets and military assistance were not clearly understood by all GoV agencies...”
- **Long established systems, i.e. FRANZ,** meant that Government of Vanuatu requests to FRANZ were quickly responded to.
- **The Government of Vanuatu needs to liaise with donors to fully understand the processes and protocols of deployment of military assets,** an issue for the GoV and Logistics Cluster to better understand. Military assets have very strict guidelines on usage, and these need to be communicated to the GoV from the outset.
- **Any incoming foreign assistance (Civil or Military) needs to follow and conform to the host country’s diplomatic channels** – the Fiji Response Team provided an excellent example of this.
- **Initial planning** prior to the disaster onset with Joint Police Operations Centre (JPOC), Vanuatu Mobile Force (VMF), Vanuatu Police Force (VPF) and the Maritime Wing would strengthen the effectiveness of response.
- **The role of the NDMO as the ‘central linking agency’ between military and humanitarian teams must be recognized** so that coordination, location and prioritization of military assets is strengthened.

Regional Coordination – Regional Mechanisms:

- **FRANZ and the Melanesian Spearhead Group (MSG)⁵⁶ played a significant role in supporting government-led interventions.** These mechanisms need to be strengthened in the context of Pacific Island countries supporting each other.

Logistics:

- **The role of civil-military coordination in the NDMO is a critical link** between humanitarian partners and the military.
- **Donor presence in-country played an important role,** liaising with military agencies (e.g. FRANZ) to establish logistical needs, issues and solutions.

⁵⁶ The MSG originated in May 2008 and is a regional grouping comprised of Papua New Guinea, Solomon Islands, Vanuatu, Fiji and a representative of the Kanak Socialist National Liberation Front (*FLNKS). Source: Melanesian Spearhead Group Secretariat, <http://www.msgsec.info/>

- **The GoV needs a clear mandate on how and when it wants to engage military assets in disaster response.** Military assets have strict guidelines on the use of their assets; systems need to be reviewed to ensure that these can be made available earlier.
- **Any incoming foreign assistance (civil and military)** needs to follow and conform to host country's diplomatic context.
- **Develop capacity at provincial level to manage any response specifically involving Civ-Mil operations,** and logistics, more generally.
- **Strengthen mechanisms for coordination and information sharing** between Civ-Mil and government agencies.
- **Strict guidelines on the use of military assets need to be communicated** to government to then relay to NGOs and provincial agencies.
- **The Vanuatu Government should have a clear policy/mandate on how to engage with Civ-Mil operations.** Any Civ-Mil deployments need to conform to diplomatic channels and protocols.
- **Civ-Mil coordination needs to be recognized as an integral part of the Logistics Cluster** with developed capacities related to this function.

*The following lessons learned excerpts are from Australia's Department of Foreign Affairs and Trade (DFAT) report "Humanitarian Assistance in the Pacific: An Evaluation of the Effectiveness of Australia's Response to Cyclone Pam:"*⁵⁷

- **The use of liaison officers was seen as a critical and positive aspect of the civil-military coordination,** which could also be incorporated further into training exercises to boost interagency understanding and knowledge...⁵⁸
- **Together with the NDMO, FRANZ efficiently coordinated key donors and assessed needs.** DFAT acted as the FRANZ chair and was applauded for its coordination of significant resources including personnel and equipment of the ADF and other members of the FRANZ alliance.

*The following lessons learned excerpts are from the Australian Civil-Military Center (ACMC) report "Post Tropical Cyclone Pam Roundtable with Civil Society:"*⁵⁹

- **...The use of military assets was well received by the Vanuatu Government and essential in critical logistic support when there was no civilian asset alternative.** This support included clearing roads and debris, and supporting initial assessments through boats and helicopters.
- **It was agreed that the Civil Military Coordinator engaged by UNOCHA and deployed through RedR played a vital coordination role on the ground.** The mix of the right personality, supported by the right skillset, training and experience proved invaluable in the important conduit role between civil and military responders. It was agreed that this individual and the CIMIC coordinator should be deployed on the first military plane with the initial NGO responders. In the case of Tropical Cyclone Pam, these coordinators arrived several days after the cyclone hit, which meant that there was little civil-military coordination in the first (vital) 48–72 hours.

⁵⁷ Humanitarian Assistance in the Pacific: An Evaluation of the Effectiveness of Australia's Response to Cyclone Pam, https://humanitarianadvisorygroup.org/wp-content/uploads/2016/06/DFAT-Cyclone-Pam-Evaluation_FINAL_280217_email-1.pdf

⁵⁸ DFAT-Defence Lessons Workshop, Outcomes Document, May 2015, 7,

⁵⁹ Post Tropical Cyclone Pam Roundtable with Civil Society, https://www.acmc.gov.au/wp-content/uploads/2015/03/ACMC_Cyclone-Pam_Roundtable_Outcomes.pdf

Tropical Cyclone (TC) Winston

Background

On February 20 and 21, 2016, Category 5 Tropical Cyclone (TC) Winston hit Fiji, causing widespread damages across the islands. It was the most powerful cyclone on record to affect the country.⁶⁰ TC Winston was the strongest cyclone to make landfall in the Pacific, according to UNOCHA.⁶¹ In fact, Winston was one of the most powerful recorded storms in the southern hemisphere, with maximum average wind speeds reaching 233 km/hr and wind gusts peaking at 306 km/hr.⁶² All four divisions of the country were badly affected. Up to 350,000 people, or around 40 percent of Fiji's population were affected.⁶³ Whole villages were reportedly destroyed, especially on the hard-hit outer Fijian islands.

At least 44 people were killed by the storm and Winston affected some 540,400 people, or, some 62 percent of the country's population. Additionally, 30,369 houses, 495 schools and 88 health and medical facilities were damaged or destroyed.⁶⁴ According to the Fiji Post-Disaster Needs Assessment, the storm caused an estimated US\$0.9 billion in damages and losses.⁶⁵

A State of Emergency was declared on February 20, and the Fijian government requested international assistance the day after Winston hit. A 30-day State of Natural Disaster was declared until March 21 and was then extended until April 19.⁶⁶ The Fijian government quickly began assessments and deliveries of relief supplies with the support of foreign military assets from Australia, France, India, Indonesia and New Zealand.



Map Sources: Fiji Department of Lands, Joint Typhoon Warning Center
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Map created on 21 February, 2016

Map credit: UNOCHA

Source: *Fiji: Severe Tropical Cyclone Winston Situation Report No. 2 (as of 22 February 2016)* https://reliefweb.int/sites/reliefweb.int/files/resources/ocha_tc_winston_sit_rep_2.pdf

60 Fiji Meteorological Service, "Fiji Post-Disaster Needs Assessment," May 2016, <http://www.ndmo.gov.fj/images/AllDisasterReports/Post-Disaster-Needs-Assessments-CYCLONE-WINSTON-Fiji-2016-Online-Version.pdf>

61 TC Pam Anniversary – Vanuatu, TC Winston – Fiji, 13 March 2016, https://reliefweb.int/sites/reliefweb.int/files/resources/tc_pam_anniversary.pdf

62 Fiji Meteorological Service, "Fiji Post-Disaster Needs Assessment," May 2016, <http://www.ndmo.gov.fj/images/AllDisasterReports/Post-Disaster-Needs-Assessments-CYCLONE-WINSTON-Fiji-2016-Online-Version.pdf>

63 Fiji: Severe Tropical Cyclone Winston Situation Report No. 9 (as of 29 February 2016), <https://reliefweb.int/report/fiji/fiji-severe-tropical-cyclone-winston-situation-report-no-9-29-february-2016>

64 Fiji Post-Disaster Needs Assessment, May 2016, <http://www.ndmo.gov.fj/images/AllDisasterReports/Post-Disaster-Needs-Assessments-CYCLONE-WINSTON-Fiji-2016-Online-Version.pdf>

65 Ibid.

66 Tropical Cyclone Winston - Feb 2016, <https://reliefweb.int/disaster/tc-2016-000014-fji?source=1503&page=3>

The Government of Fiji led the response with support from national and international humanitarian organizations, the Republic Of Fiji Military Forces and foreign militaries. The National Disaster Management Office (NDMO) coordinated efforts and activated the National and Divisional Emergency Operations Centers (EOCs)⁶⁷ to help coordinate response.

According to the post-disaster needs assessment, total damage and losses from the storm are estimated at US\$1.42 billion (roughly 31% of GDP).⁶⁸

Other affected countries:

Fiji was the worst-affected country from Tropical Cyclone Winston, however, Niue, Tonga and Vanuatu were also affected by the storm:

- **Niue:** Slightly affected by TC Winston, but no damages were reported
- **Tonga:** 2,500 people evacuated, 10 houses destroyed and 200 damaged⁶⁹
- **Vanuatu:** Affected by heavy rains and winds

Fiji's Overall Disaster Risk

According to the World Risk Report 2017, Fiji is the 15th ranked country with the highest risk for disasters worldwide.⁷⁰ According to Fiji's NDMO, aside from storms, hazards such as flash floods, landslides, and storm surges are the most common hazards to affect Fiji. Fiji is also affected by drought, earthquakes, coastal erosion, and is at risk for tsunamis.⁷¹

Fiji's risk to Cyclones

The cyclone hazard risk to Fiji is considered to be “high.” What this means according to GFDRR's website “thinkhazard.org” is that there is more than a 20% chance of potentially damaging wind speeds in the next ten years. The website notes that damages can not only occur due to wind but also cyclone induced heavy rainfall and flooding as well as coastal floods.⁷²

National and International Response Efforts

Government of Fiji (GoF) Response

The Fiji government led the response with support from national and international organizations, the Republic of Fiji military and foreign militaries, with Fiji's National Disaster Management Office (NDMO) coordinating overall efforts.

To help facilitate civil-military coordination, the NDMO established a Request for Assistance (RFA) process. UNOCHA was also used to facilitate communications between the NDMO and international humanitarian organizations regarding offers of assistance. Overall, “Civil-military cooperation was

⁶⁷ Ibid.

⁶⁸ ADB Provides \$50 Million For Fiji Cyclone Relief, <https://reliefweb.int/report/fiji/adb-provides-50-million-fiji-cyclone-relief>

⁶⁹ Tonga, Fiji – Tropical Cyclone Winston (GDACS, JTWC, NASA, Vanuatu Met. Services, Fiji Met. Service, Media) (ECHO Daily Flash of 19 February 2016), <https://reliefweb.int/report/tonga/tonga-fiji-tropical-cyclone-winston-gdacs-jtwc-nasa-vanuatu-met-services-fiji-met>

⁷⁰ World Risk Report 2017, https://reliefweb.int/sites/reliefweb.int/files/resources/WRR_2017_E2.pdf

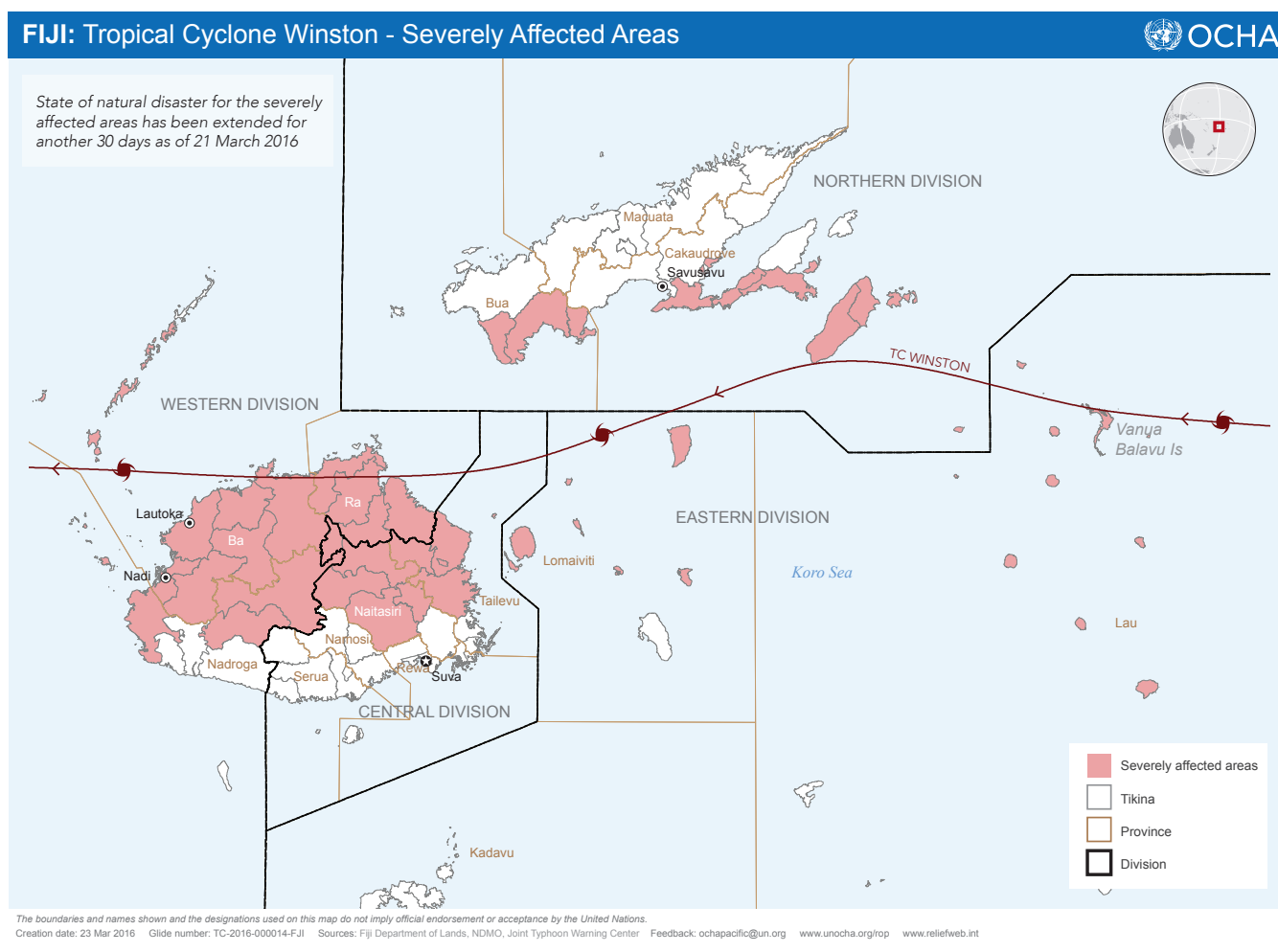
⁷¹ The National Disaster Management Office, Fiji NDMO website, <http://www.ndmo.gov.fj/index.php/2016-12-16-03-10-44/know-your-hazards>

⁷² Fiji: Cyclone, <http://thinkhazard.org/en/report/83-fiji/CY>

strong and assisted with the complex logistics of a response that was stretched across many isolated islands,” according to UNOCHA.

The GoF established three levels of planning to guide response – current operations, future operations, and planning and international coordination. The GoF also identified 12 priority zones for its response.⁷³

In its report, “Tropical Cyclone Winston - Response and Flash Appeal - Final Summary, 13 June 2016,” UNOCHA Regional Office for the Pacific writes that Pacific governments in previous years have been advocating to provide a stronger degree of localized response and this approach was taken by the GoF during relief operations. Another new concept that was introduced during the response was the use of cash vouchers for the purchase of food and rebuilding materials.



Map Credit: UNOCHA

Source: FIJI: *Tropical Cyclone Winston - Severely Affected Areas* (23 Mar 2016), <https://reliefweb.int/map/fiji/fiji-tropical-cyclone-winston-severely-affected-areas-23-mar-2016>

⁷³ Fiji: Severe Tropical Cyclone Winston Situation Report No. 6 (as of 26 February 2016), https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/ocha_tc_winston_situation_report_6.pdf

International Response

A 15-member UN Disaster Assessment and Coordination (UNDAC) team was stood up and deployed by OCHA to support the response by being a link between government-led response efforts and incoming international assistance. The team primarily consisted of members of the Pacific humanitarian community, including members from OCHA's Regional Office for the Pacific (ROP). One of the first tasks the UNDAC team did was to set up a Reception and Departure Center at Suva international airport for UN and NGO staff as well as for medical and search and rescue teams.⁷⁴

The Pacific Humanitarian Team were requested to work through the national cluster system. Clusters stood up included: Food Security and Livelihoods, Safety and Protection, Education, Water, Sanitation and Hygiene (WASH), Health and Nutrition, Shelter, and Logistics and Telecommunications.⁷⁵

Since 2008 the PHT has responded to more than 30 disasters in both the North and South Pacific, mobilizing technical expertise, relief items and international funding for humanitarian response. In the two most recent major PHT responses alone – TC Winston in Fiji (2016) and TC Pam in Vanuatu (2015) – PHT supported appeals raised more than US\$42 million for humanitarian response, including US\$13 million in grants from the global Central Emergency Response Fund (CERF) to meet immediate live-saving needs.⁷⁶



Photo Credit: UN Women/Anna Parini

Source: <https://flic.kr/p/Fcn5hi>

⁷⁴ Responding to Tropical Cyclone Winston, <https://www.unocha.org/story/responding-tropical-cyclone-winston>

⁷⁵ Fiji: Severe Tropical Cyclone Winston Situation Report No. 10 (as of 1 March 2016), https://reliefweb.int/sites/reliefweb.int/files/resources/ocha_tc_winston_situation_report_10.pdf

⁷⁶ UNOCHA, "Operational Civil Military and Humanitarian Coordination in the Pacific," Health and Humanitarian Action in Emergencies Course. (Power-Point slides)

Military Response

At least five foreign militaries assisted Fiji in the immediate aftermath of TC Winston. These included: Australia, France, India, New Zealand and Tonga. A staff member from the 15-member United Nations Disaster Assessment and Coordination (UNDAC) team temporarily joined the National Disaster Management Office to support Civil-Military coordination between the Royal Fijian Military Forces and foreign military assets deployed as part of the response.⁷⁷

Republic of Fiji Military Forces (RFMF):

UNOCHA listed Fijian military assets available for the response effort:

- RNFS Kiro
- RNFS Lautoka

Government Shipping Services (GSS) Maritime Assets were also listed by UNOCHA as available for relief efforts:

- MV Sigavou
- MV Vunilagi
- MV Cagivou
- MV Iloiliovatu
- MV Rogovoka
- MV Vatulawa⁷⁸

Foreign Military Response

Foreign assisting militaries in support of the Fijian military and GoF included the following:

Australia

The Australian Defence Force (ADF) operation to assist the Fijian government with relief efforts was dubbed: “Operation Fiji Assist.” The operation lasted from February to April 2016. Approximately 1,000 ADF personnel deployed for the relief operation. ADF engineers assisted with repairing schools, medical centers, and critical infrastructure.

Military assets utilized included:

- P3 Orion aircraft conducted early surveillance assessments;
- The HMAS Canberra helped deliver some 60 tons of relief supplies to the affected population;
- Royal Australian Air Force (RAAF) C-17 and C-130 aircraft helped deliver 520 tons of relief supplies and equipment; and,
- 7 MRH-90 helicopters helped facilitate personnel and supply movements⁷⁹

⁷⁷ Responding to Tropical Cyclone Winston, <https://www.unocha.org/story/responding-tropical-cyclone-winston>

⁷⁸ Fiji: Foreign Military Assets (FMA) (as of 13 March 2016), <https://reliefweb.int/report/fiji/fiji-foreign-military-assets-fma-13-march-2016>

⁷⁹ Australia's response to help Fiji recover from Tropical Cyclone Winston, <http://dfat.gov.au/aid/topics/investment-priorities/building-resilience/humanitarian-preparedness-and-response/tc-winston/PublishingImages/tc-winston-infographic.jpg>

France

France assisted the response with aircraft and a patrol boat.

Military assets utilized:

- 2 CASA C-212 aircraft
- Patrol Boat La Moqueuse⁸⁰

India

Military assets utilized:

- Indian Air Force C17 which helped deliver relief supplies.⁸¹

Indonesia

- Jakarta sent 100 military engineers to help with repairs.⁸²

New Zealand

The New Zealand Defence Force (NZDF) launched “Operation Pacific Relief” to assist the Fijian government with the response. The operation lasted from February 20 to April 17, 2016. Some 530 civilian and military personnel deployed for this operation in reportedly one of the NZDF’s largest peacetime deployments in the Pacific.

Military assets used:

- HMZNS Canterbury and embarked Seasprite helicopter
- Offshore Patrol Vessel HMNZS Wellington
- P3K2 Orion
- C-130
- Boeing 757
- King Air B200
- Two NH90 helicopters
- 45 assorted military vehicles

Operation summary (from NZDF):

Less than 24 hours after the cyclone hit, a P3K2 Orion began conducting aerial surveys. The HMZNS Canterbury helped deliver 380 tons of aid supplies and construction materials, with two landing craft from the ship utilized for aid distribution. The Seasprite helicopter (from the Canterbury) completed around 70 hours of relief missions transporting supplies, NZ medical volunteers, NZDF personnel, and Fiji government staff. The patrol boat HMNZS Wellington operated for nearly 3 weeks and helped deliver 70 tons of aid. The Wellington also helped identify routes and anchorage for the Canterbury.

A C-130 helped deliver 120 tons of aid, while a Boeing 757 brought an advance group of 37 combat engineers and 1,050 water containers to Fiji. A King Air B200 supported the operation for about 3

⁸⁰ Fiji: Foreign Military Assets (FMA) (as of 13 March 2016), <https://reliefweb.int/report/fiji/fiji-foreign-military-assets-fma-13-march-2016>

⁸¹ Ibid.

⁸² Fiji seeks closer military ties with Indonesia, <http://www.pireport.org/articles/2016/11/03/fiji-seeks-closer-military-ties-indonesia>

weeks transporting Fijian government staff and civilian volunteers from organizations such as the Fiji Red Cross. It also conducted assessments for the Fiji Roads Authority. Two NH90 helicopters flew around 160 hours for the relief mission. They delivered aid supplies and also transported New Zealand medical volunteers, NZDF personnel and Fiji government staff. Additionally, some 45 military vehicles were used to support operations on northern Lau.

New Zealand Army engineers also set up a water desalination station that converted seawater into drinking water at Lomaloma village on Vanuabalavu Island. Up to 10,000 liters of potable drinking water were produced daily to support the New Zealand contingent and villages on Vanuabalavu.

Around 60 New Zealand Army carpenters, electricians, plumbers, plant operators and engineers worked alongside soldiers from the Republic of Fiji Military Forces to repair dozens of schools, medical centers and community buildings on the main island of Viti Levu and in the remote northern Lau archipelago.⁸³



Major General Tim Gall, Commander Joint Forces New Zealand, visits cyclone-battered Vanuabalavu Island in Fiji's northern Lau archipelago, accompanied by Fiji's Minister for Disaster Management, Inia Seruiratu, and Republic of Fiji Military Forces Commander Rear Admiral Viliame Naupoto.

Photo credit: NZDF

Source: NZDF Commander Visits Cyclone-Battered Fiji, <http://www.nzdf.mil.nz/news/media-releases/2016/20160313-nzdfcvcbf.htm>

Tonga

His Majesty's Armed Forces (HMAF) provided the following assets:

- VOEA Pangai (Pacific Class Patrol Boat)
- VOEA Late LCM-8 Logistics Barge

US Government (USG) Response to TC Winston

As with the response to TC Pam, United States Pacific Command (USPACOM) was not asked to support the USG response to TC Winston. On February 21, 2016, U.S. Ambassador Judith B. Cefkin declared a disaster in Fiji due to the effects of TC Winston. USAID/OFDA immediately provided an initial US\$100,000 to support the international Federation of the Red Cross and Red Crescent Societies and the Fiji Red Cross Society. A USAID/OFDA regional advisor was deployed for assessments and to coordinate USG response with the GoF and humanitarian partners.⁸⁴

USAID/OFDA also provided US\$300,000 to UNICEF for WASH assistance and US\$200,000 to the International Organization for Migration (IOM) to assist displaced populations. Additionally, US\$1 million was granted by the USAID Office of Food for Peace to support WFP assistance.⁸⁵

⁸³ "Infographic: New Zealand Defence Force: Assistance to Fiji's Disaster Recovery Efforts," <http://www.nzdf.mil.nz/downloads/pdf/general/op-pacific-relief-factsheet-april2016.pdf>

⁸⁴ Fiji Disaster Assistance: USAID, <https://www.usaid.gov/crisis/fiji>

⁸⁵ WFP Fiji Situation Report #03, 31 March 2016, <https://reliefweb.int/sites/reliefweb.int/files/resources/WFP%20Fiji%20Situation%20Report%20%2303%2C%2031%20March%202016.pdf>

Earlier, in January, 2106, OFDA launched the program “Building Resilient Communities” in conjunction with the Fiji Red Cross which included a grant of US\$1.278 million, including support for the response to Winston. According to the U.S. Embassy in Fiji, Kiribati, Nauru, Tonga and Tuvalu, through the USG funded program, Coastal Community Adaptation Program (CCAP), two CCAP communities along the coast of Vanuatu Levu weathered the storm and four cyclone-proof homes funded by USAID in Vunisavisavi also remained intact and served as shelter during Winston.⁸⁶

Discussion: Military response Lessons Learned

The following are select response lessons learned for the military responder from relief efforts for TC Winston from a variety of sources.

TC Winston Lessons Learned

The logistics of delivering assistance to more than a third of the Fijian population, especially those in the remote interior and outer islands, created a significant challenge for the relatively small humanitarian community in Fiji. In addition to the contribution of military actors in helping to manage this challenge, the World Food Program’s arrival as the new Logistics Cluster lead, based in Suva, was also critical.⁸⁷

Complex logistical support provided through strong civil-military cooperation enabled emergency relief across many isolated islands. The cyclone cut off access to many of the outer islands and even populations residing in the rural interior, hindering emergency response efforts. Many of the humanitarian actors would not have had the capacity or resources to carry out relief efforts without the support provided by the military.⁸⁸

Immediate emergency assistance activities were undertaken through Civil-Military Coordination. Immediate emergency efforts were supported through military logistical assistance provided primarily from Australia and New Zealand, and additional support from France, India, and Indonesia, which enabled rapid deployment of equipment, personnel and supplies to affected areas. Straight after TC Winston, aerial surveillance of the affected regions was conducted using the New Zealand Defence Force P3 Orion aircraft to assess the level of damage, and the sea and air access to maritime areas. During this time the Australian military helicopters were also on standby for deployment to assist with further surveillance, medical evacuation or distribution of relief goods.⁸⁹

⁸⁶ The United States provides additional support to relief efforts in Fiji, <https://fj.usembassy.gov/united-states-provides-additional-support-relief-efforts-fiji/>

⁸⁷ Fiji: Tropical Cyclone Winston – Response & Flash Appeal – Final Summary, 13 June 2016, <https://reliefweb.int/report/fiji/fiji-tropical-cyclone-winston-response-flash-appeal-final-summary-13-june-2016>

⁸⁸ Social Protection and Humanitarian Assistance Nexus for Disaster Response: Lessons Learnt from Fiji’s Tropical Cyclone Winston, <http://documents.worldbank.org/curated/en/143591490296944528/Social-protection-and-humanitarian-assistance-nexus-for-disaster-response-lessons-learnt-from-Fiji-Tropical-Cyclone-Winston>

⁸⁹ Ibid.

Strong civil-military and donor coordination led to the fast deployment of relief assistance in the first few weeks of TC Winston. Based on the aerial surveillance by the New Zealand Defence Force P3 Orion aircraft, extensive damage was revealed to the outer islands... The Australian military helicopters already on standby were also deployed to affected areas with relief supplies for 1500 families as part of an initial A\$5 million assistance package. The New Zealand aid initially totaled N\$2 million and an emergency flight carrying 12 tons of supplies requested by the Fijian Government...carrying water containers, tarpaulins, generators, chainsaws, tool kits and a response team. France also donated the use of military aircrafts which arrived in late February from New Caledonia, loaded with almost 12 tons of shelter and WASH supplies amongst other relief items.⁹⁰

Supply Chain: The United Nations' World Food Program (WFP), noted that the establishment of Request for Assistance forms and procedures for the use of military assets helped maximize the efficiency of the operation.⁹¹

Logistical challenges and constraints: Civil-military cooperation was strong and assisted with the complex logistics of a response that was stretched across many isolated islands.⁹²

Strong civil-military coordination was facilitated by OCHA and UNDAC personnel embedded in the NDMO. This included the establishment of a 'Request for Assistance' system that allowed NGOs to move supplies around the country using foreign military assets.⁹³

Conclusion

Both Tropical Cyclone Pam and Tropical Cyclone Winston were among the worst disasters to ever hit the South Pacific, especially in recent memory, severely impacting the region just a year apart. The devastation by the two powerful storms were intense and widespread and reconstruction continues as of this writing.

Due to the scale of the damage, both the Government of Vanuatu (GoV) and the Government of Fiji (GoF) immediately asked for international assistance to deal with the effects of the disasters. With a strong regional component, aid also came from different parts of the world, including from foreign militaries. Foreign military assets, particularly surveillance and logistical capacities, were utilized to help fill gaps in the civilian response.

The response to the storms, coordinated and led by both the GoV and the GoF respectively, was quick. The international humanitarian community and foreign militaries rallied around the governments to assist in the immediate coordination and relief efforts and subsequent rebuilding of the affected areas.

⁹⁰ Ibid.

⁹¹ Fiji Emergency Response to Tropical Cyclone Winston Standard Project Report 2016, <https://docs.wfp.org/api/documents/df49a-37d2119408480a18757ef1994f0/download/>

⁹² Tropical Cyclone Winston Response and Flash Appeal Final Summary 13 June 2016.

https://reliefweb.int/sites/reliefweb.int/files/resources/FINAL%20-%20TC%20WINSTON%20Flash%20Report_130616.pdf

⁹³ Ibid.

Although USAID/OFDA helped respond to both disasters, USPACOM assets were not required due to the robust response by primarily regional and other militaries. Regional military agreements on disaster response, such as the FRANZ Arrangement, contribute greatly to help provide unique and additional assets for disaster response should the calamity overwhelm national and regional civilian capacity.

Civil-military coordination was considered to be strong and assisted with coordinating the response and overcoming the logistical challenges of the South Pacific, reaching affected populations spread across dozens of islands. Foreign military aircraft, ships and personnel with logistical, medical, communication and engineering skill sets, greatly assisted the overall response operations.

As with other disaster response operations, there were many difficult challenges, particularly the harrowing logistical problems as mentioned above. Fortunately, through improved civil-military coordination, many of these challenges to the response effort were overcome. The overall response to TC Pam and TC Winston is firstly a testament to the resilience of the Pacific community but also to the efforts of the international humanitarian community aided in large part by national security forces and foreign militaries.

This and other CFE case studies are aimed to help inform future USPACOM and other foreign military disaster response as well as civil-military coordination in the Indo-Asia-Pacific region. The CFE case study series also aim to identify areas in need of improvement, particularly in regards to civil-military coordination and military disaster response, which can be bolstered by continued or increased information sharing, research, training, education and regional engagements.

Questions for Discussion

1. Name some challenges to responding to disasters in the South Pacific
2. How can the so-called "Tyranny of Distance" in the Pacific affect response efforts?
3. What regional militaries do you think would participate in a response in the South Pacific and why?
4. What countries are part of the FRANZ arrangement?
5. How do regional arrangements (including military) strengthen disaster response efforts?
6. Do you know of any other regional groupings that respond cooperatively to disasters?
7. What humanitarian organizations might you expect to collaborate with in an international disaster response in the Pacific?
8. How does the United Nations assist the affected state?
9. What are the main regional humanitarian groupings that foreign militaries should expect to work with when responding to a disaster in the Pacific?
10. What lessons can responding militaries learn from the response to TC Pam and TC Winston?
11. What best practices for militaries should be put in use for the next disaster response in the Pacific?



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