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## SOLOMON ISLANDS

Solomon Islands is vulnerable to natural catastrophes like cyclones, tsunamis, floods, and earthquakes as it is in the “Pacific Ring of Fire.” For instance, in 1976, a huge earthquake displaced many people, mostly from South Guadalcanal, who are now relocated to other parts of the island. Likewise, Cyclone Namu in 1996 saw the destruction of schools and homes and also resulted in the relocation of villages, schools, and infrastructure. Selwyn College, a senior secondary school in the country, was moved from the east of Honiara to West Guadalcanal as a result of the effects of Namu. In recent years, the frequency of natural disasters occurring is particu-

larly high (Catford 2014). The United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) summarized the impact of some of those disasters: “In April 2007, a shallow earthquake measuring 8.1 magnitude triggered a tsunami that killed 52 people . . . in the Western and Choiseul Provinces. . . . In February 2013, an 8.0 magnitude earthquake struck off the coast of the Santa Cruz Islands . . . followed by a one metre high tsunami wave that killed 10 people. . . . Three days of heavy rain from Tropical Cyclone Ita caused severe flooding in early April 2014. There were 22 confirmed deaths and over 50,000 people affected, mainly in the capital, Honiara, and other areas of Guadalcanal Province” (UNOCHA 2017).

Such disasters are not unique to Solomon Islands; other neighboring Pacific Island communities have also had experiences with drastic weather, including pattern changes, in recent years. Vanuatu had to pick up the pieces after Tropical Cyclone Pam left a trail of destruction and deaths in 2015, and Fiji felt the full brunt of Tropical Cyclone Winston in 2016 with loss of human lives and destruction of property. These countries are still recovering from various natural disasters, not to mention the hardship that governments and communities face in their attempts to rebuild and move on. The effects of climate change are undeniable as occurrences of extreme weather events increase. Solomon Islands and other Pacific Island countries will therefore have to work together to influence international decisions that address the effects of climate change. As former Kiribati

President Anote Tong succinctly put it: “We have no choice but to engage even more aggressively internationally because the key to our survival will depend on whether international action is taken on climate change or not. . . . We can and must continue to work diligently together to influence world opinion on these issues, because they matter to us” (2016, 24).

As in preceding years, floods, cyclones, landslides, and the threat of tsunamis continued to be the norm in 2016 in Solomon Islands. The year saw continuous heavy rains and wet weather at different intervals that brought about serious floods and dangerous winds. In April, many communities suffered damage to their food gardens and drinking water due to the effects of a tropical depression, including continuous rainfall and flooding. Villager and farmer Rose Siku stated that “the damage to her crops would affect her family’s livelihood for several months.” She also said that “drinking water was contaminated, with most people not having access to tank supplies” (RNZ 2016a). In October 2016, parts of the Solomons, particularly islands in Temotu Province, close to Vanuatu, again experienced heavy rains. And as 2016 was coming to an end, another period of torrential rain disrupted infrastructure and affected people’s livelihoods. It was forecast that during the 2016–17 cyclone season (which runs from November to April) Solomon Islands could expect as many as ten tropical cyclones (STO 2016).

Toward the end of 2016 and in early 2017, yet another devastating rain with accompanying floods affected the country, destroying

bridges, roads, and food gardens. Flooding in Honiara resulted in no recorded injuries, but patients from the national referral hospital had to be relocated temporarily (Diisango 2017). As in the aftermath of previous tropical depressions and floods, the government with the help of other agencies carried out assessments and provided supplies to keep people going until their food gardens were once again ready for harvesting. For instance, the Solomon Islands Ports Authority assisted the people of East Malaita who had been affected by the late 2016 rains and flooding (Saeni 2016b). Natural disasters and sufferings caused by tropical depressions and cyclones have become a constant threat and challenge to Pacific Islands people and governments. For Solomon Islands, “The average annual loss due to natural hazards and climate related events represents about 3 percent of the [gross domestic product] or approximately SBD\$144 million” (ss 2016b).

A particularly notable period involving a tropical depression and heavy rains occurred in April 2016 when water from the tailings dam at the former Gold Ridge mine flowed into nearby rivers. The mine by then had been abandoned for about two years and was not operational. Two years earlier, arrangements had been made between St Barbara Limited, an Australian company, and a local company formed by landowners called the Gold Ridge Community Investment Limited (GCIL), and the mine was handed over to the local company for A\$100 (Armbruster 2016). On the face of it, this was a good thing, but critics saw the transfer as a way

for St Barbara to neglect the liabilities associated with a possible future environmental catastrophe. Because of the extremely high level of contaminated water in its tailings dam (ABC News 2015), St Barbara had closed the mine in April 2014 during flash floods that killed twenty-five people and destroyed property along the Mataniko River and left 50,000 others homeless (ABC News 2014, 2016b).

Since taking over the mine in 2015, GCIL had tried to bring in new machinery to dewater (release water from) the tailings dam. They managed to secure a dewatering machine in 2016, but heavy rains started again before they could properly install and activate the equipment. The rains in early 2016 resulted in the uncontrolled release of wastewater from the dam. That prompted communities living downstream to lodge complaints with the environment and health ministries (Armbruster 2016). One of the officers who responded to the complaints stated, “From our observation, the dewatering process appeared to be out of control. . . . Due to the heavy rain in the area over the past few days, water from the dam was allowed to flow freely through the spillway into the streams below” (ss 2016c).

For the Ministry of Environment, Climate Change, Disaster Management, and Meteorology (MECDM), the decision to dewater was likely difficult to make under the pressure of weather conditions, but there was a serious possibility that the walls of the tailings dam might otherwise be breached. Ultimately, Director of Environment and Conservation Division Joe Horokou approved the application by the local owners of Gold Ridge

to dewater, and GCIL was given a forty-five-day license for the process. Dr Melchior Mataki, the environment ministry's permanent secretary, stated, "The ideal situation here is for the discharge from the TSF [Tailing Storage Facility] with treatment. But the unfortunate thing is that if we do not take any measures to stop the spill over then we risk also the integrity of the full dam itself" (RNZ 2016b).

Unfortunately, there were mixed messages on the safety of the water released into the rivers from the Ministry of Health and Medical Services, the MEDCM, and the company owners, at least from the view of the public. On the one hand, the health ministry issued precautionary warnings at the time of dewatering, instructing downstream communities not to use the water for cooking, drinking, or bathing (RNZ 2016b). But on the other, GCIL management referred to a report by Simon Albert of the University of Queensland whose assessment from the top of Metapona River and downstream did not mention anything about contamination. GCIL company secretary Ben Afuga stated, "I can confirm the test results have shown, in fact, zero concentration of cyanide and very low concentration of arsenic and other hazardous chemicals" (Fox 2016). With the upcoming reopening of the mine, there must be proper assessments of possible future repercussions based on previous experiences.

There were also frequent earthquakes throughout the year, with a major one occurring outside of Makira in December 2016. Its effects were felt in the central and eastern parts of the country, with Makira-

Ulawa Province the hardest hit; the quake there measured at 7.9 on the Richter scale (Manebona 2017). The people of Makira, southern parts of Malaita, northern Guadalcanal, and Rennell and Bellona provinces saw extensive loss of property and damage, especially to homes and public facilities. It was reported that almost 10,000 people from those areas were affected by the earthquake. ReliefWeb reported on 14 December, "A nine-year-old child died in Guadalcanal when a house collapsed. In total, 191 houses have been destroyed and 114 damaged. Eleven schools and a medical clinic have also been damaged by the quake" (ReliefWeb 2016). A newly built wharf in Afio, Malaita Province, was also damaged by the earthquake (Saeni 2016a).

In Kirakira town, the administrative center of Makira-Ulawa Province, "the quake damaged a hospital, a church, and other buildings including the World Vision office" and twenty patients had to be evacuated from the hospital and taken to safer and higher grounds (Perry 2016). A mother with her one-year-old baby narrowly missed a brick falling from their house during the earthquake. She was quoted saying, "I felt very hopeless. I thought my baby and I would die. . . . I heard people shouting and children crying. Many people ran to the hills and we joined them" (ABC News 2016a). The head of World Vision in Solomon Islands, Janes Ginting, claimed that disaster preparedness and awareness put together by the government and other actors over the years assisted in preventing more damage in this particular situation.

A total of 10 aftershocks ranging

from 4.5 to 5.5 were recorded (Relief-Web 2016). In addition to leaving some people homeless and destroying all their belongings, the earthquakes and tremors disrupted business and deterred people from going about their normal activities. Flights were canceled, and businesses and schools were closed. After one big earthquake in 2016, the residents of Gizo (who had experienced the effects of earthquakes and a tsunami that hit them in 2007) headed for the hills for fear of a possible tsunami (Diisango 2017). As former World Vision Solomon Islands Director Andrew Catford stressed, “As the number, severity and randomness of disasters increases with climate change, it is the same group [rural poor] who are becoming more and more vulnerable” (2014, 116).

There are significant government and donor efforts to try and improve both disaster response and mitigation. In response to the various natural disasters of 2016 and the beginning of 2017, the national government through the National Disaster Council (NDC) and National Disaster Management Office (NDMO) made quick assessments and provided relief support to people. Some of the businesses and organizations that assisted in 2016 included Kosol Limited, Solomon Islands Red Cross Society, World Vision Solomon Islands (WVSI), the Australian government, and other donors and family members working elsewhere (SIBC 2016; SS 2016a, 2016d).

More important, given the fact that Solomon Islands is vulnerable to all sorts of natural disasters, there were efforts at the national level to set up emergency warning systems. In

December 2016, the Lord Howe community received an early warning system from the Secretariat of the Pacific Regional Environment Programme (SPREP) through the MECDM. The system is supposed to allow people ample time to seek shelter before a tsunami strikes (SS 2016b; Filia 2016). Since it is a new initiative, it will take time before we know the warning system’s level of usefulness.

People in Solomon Islands are also facing effects of climate change in terms of sea-level rise. These threats are real and present, and for some Solomon Islanders living on artificial and low-lying islands, day-to-day experiences have been a struggle. Prime Minister Manasseh Sogavare visited Sulufou, one of the small islands in Malaita that is visibly suffering from sea-level rise. He was there to officially open a water supply and sanitation system for the Islanders. Fanalei Island was also reported as being seriously affected by sea-level rise and the likelihood of Fanalei becoming uninhabitable in the near future is high (Sanga 2017). As Rebecca Monson and her coauthors wrote, “In some places, this [sea-level rise] has resulted in the relocation of entire communities from small islands and atolls to larger islands. Other communities are currently discussing the prospect of relocating to higher ground” (2012, 103). The Conversation reported, “Recently five reef islands in the remote Solomon Islands have been lost completely to sea-level rise and coastal erosion, and a further six have been badly eroded. These islands . . . range from one to five hectares.” The report also stated that Nuatambu Island, which hosted

twenty-five families, saw firsthand the inundation of seawater and the washing away of eleven houses since 2011 (The Conversation 2016). This issue is not going to go away; Solomon Islands, like other Pacific Islands, will have to make some hard decisions in the future with regard to the relocation of many of its people.

It is therefore important that the current momentum on climate-change negotiations at international forums be maintained and passionately supported. Pacific Islands leadership and influence in the decisions that led to the signing of the Paris Agreement has been crucial. As SPREP confirmed, “The Pacific islands have helped make world history as the Paris Agreement comes into force, with all 14 Pacific island parties to the United Framework Convention on Climate Change having ratified the Paris Agreement. Playing a pivotal role with the Alliance of Small Islands States (AOSIS) at the Climate Conference in December last year [2015] which brought about the Paris Agreement, the Pacific islands have shown solidarity yet again in ratifying the Agreement which starts from the year 2020” (SPREP 2016). And as Tuvalu Prime Minister Enele Sopoaga rightly stated, “I think it is timely given the full force of the Paris Agreement, that we ourselves clarify and understand those issues so we can address the provisions of loss and damage in the Paris Agreement with clarity” (Lanyon 2016).

Now that the president of the United Nations General Assembly (Peter Thomson from Fiji) and the cochairs of the Pacific Ocean Summit (Hawai'i Governor David Ige and Federated States of Micronesia

President Peter Christian) are all from the Pacific region, it is important that Pacific Islanders strategize more and work harder to influence the outcomes of global decisions that address climate change and sea-level rise. Climate change and its effects will continue to haunt Solomon Islands because of sea-level rise, changes to weather patterns, and the increased frequency of tropical cyclones, earthquakes, and other extreme natural events. As a member of the global community, Solomon Islands is hopeful that the agreements reached in 2017 will complement and add to the global commitments made earlier to mitigate and address some of the challenges that come with natural disasters.

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## VANUATU

Following one of the most tumultuous years in Vanuatu's history with the trial, conviction, and imprisonment of fourteen members of Parliament (MPs) on charges of bribery and corruption, there was some hope at the beginning of 2016 that things could only get better, though remnants of past events still remained to be dealt with. Unfortunately, the country faced serious economic problems stemming from the destruction brought in March 2015 by Cyclone Pam—a category five storm that ravaged the archipelago's eastern and southern islands as well as the nation's capital of Port Vila. The surprise dissolution of Parliament in November 2015, which triggered a snap election, was not welcomed initially but did have the effect of finally removing the discredited caretaker government of Sato Kilman and allowing for a fresh start with a host of new politicians (Van Trease 2016, 484–487).

Despite the short time between when the election was announced (21 November 2015) and the actual voting day (22 January 2016), the electoral process itself proceeded in the normal way with few problems, though the voter turnout was low—a