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Effects of Hurricane Maria on Western Puerto Rico

Yazmine Aimee Justiniano

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Effects of Hurricane Maria on Western Puerto Rico

by

Yazmine Aimeé Justiniano

An Honors Capstone submitted in partial fulfillment of the requirements for the Honors Diploma

to

The Honors College

of

The University of Alabama in Huntsville

April 24, 2019

Honors Capstone Director: Dr. Linda Maier
Professor of World Languages and Cultures

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4/25/19
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Dedication:

This Honors Thesis is dedicated to my family; my immediate family here in Alabama for all their support throughout my undergraduate career and my extended family back in Puerto Rico. My parental family, la Familia Justiniano, and my maternal family, la Familia Ortiz, who have made me love and have pride in where I come from and for being my greatest inspirations for this thesis. I would like to thank my cousin, Yadira Torres, and all my family and friends who I was able to interview and receive photographs from to gain a greater insight for this project. I also want to dedicate this to “mis abuelos,” my grandparents who have already passed, Ramón Ortiz, Alisia Segarra, y José Guadalupe Justiniano who were on my minds throughout this project in hopes of making them proud. Lastly, I would like to dedicate this to all the Puerto Ricans who went through the tragic event of Hurricane Maria; those who survived, those whose lives were lost, families who suffered and/or are still suffering, and anyone who was affected by this storm and felt their voices have not been heard. Boricua aunque naciera en la luna.
Abstract

The devastation that Hurricane Maria left on the island of Puerto Rico after making landfall in September 2017 marks it as the worst natural disaster to ever hit Puerto Rico in history. Hurricane Maria damaged more than the infrastructure of Puerto Rico. Puerto Rico’s environment, landscape, and ecosystem suffered visible damaged apparent in photos. However, the island’s tourism, healthcare system, education system, and economy were also greatly affected and often discussed less. Coming from a Puerto Rican family from the western side of the island, I want to share their stories since Puerto Rico is more than just the capital of San Juan and the center of the island’s tourism. Puerto Rico includes every seventy-eight municipalities north to south, east to west; some are poorer than others, some struggled more than others, some suffered more damage than others, but all want to have their stories heard. With my recent travel to Puerto Rico, I heard from family and friends the experiences that they went through and wanted to compare those to others from the eastern side of the island. I also saw first-hand through the eyes of a tourist with the heart of a local the effects that this hurricane left on the island, the recovery that has occurred, the reconstruction that is still needed, and the struggles that this side of the island continues to have while comparing the eastern side of the island to the western side of Puerto Rico.
Introduction

September 20th, 2017 is a day that will always be remembered by all Puerto Ricans, not only by those on the island, but those around the world. So many Puerto Ricans here in the continental United States were awake in the early hours of the morning, anxiously watching the news. Many watched as the news broadcasted the storm’s progression and path as it hit Puerto Rico. Many waited for the unknown that was to come for the beloved island of Puerto Rico. Hurricane Maria is marked as the worst natural disaster to hit the United States Commonwealth of Puerto Rico in its history, after leaving the island in devastation in September 2017. The winds and rainfall that Hurricane Maria brought to Puerto Rico would prove to cause short-term and long-term effects to the environment, infrastructure, tourism, healthcare system, education system, and economy that many did not initially foresee.

Hurricane Maria’s Progression to Puerto Rico

Hurricane Maria began on September 12th when it formed as a cyclone off the west coast of Africa. Over the next few days, Maria would move west through the Atlantic Ocean, with each day growing in strength. In less than six days, by September 18th, the cyclone grew from a tropical storm to a Category 5 Hurricane en route to impact the island of Dominica in the Lesser Antilles (Pasch, Penny, and Berg. 2017). After Hurricane Maria ravaged Dominica with winds of over 166 miles per hour, Maria lost some strength downgrading to a maximum Category 4 Hurricane as it continued through the Caribbean Sea as seen in Figure 1 (NOAA, 2017).
As Puerto Ricans on the island had experienced Hurricane Irma days before, many thought and hoped that Hurricane Maria would weaken and change paths as Irma did missing the majority of Puerto Rico. However, as Maria entered the Caribbean Sea, the National Weather Service saw that instead, Hurricane Maria was staying on its original trajectory and projected to pass directly through the island with a force that had not been seen in Puerto Rico in almost 100 years since the passing of the San Felipe Segundo (St. Felipe II) Hurricane in 1928.

According to the Hurricane Maria Report prepared by the National Hurricane Center, at 0615 AST on Wednesday, September 20th, Hurricane Maria made landfall with the eye of the hurricane entering through the southeastern corner of the island into the town of Yabucoa, with a double outer eye wall that extended across 28 nautical miles as seen in Figure 2 below.

Figure 1: The figure above taken from the NOAA, shows an infrared image of Hurricane Maria off the coast of St. Croix on path to Puerto Rico. The darker colors of orange and red corresponds to areas of greater intensity.
With wind speeds up to 155 miles per hour and wind gusts up to 175 miles per hour, Hurricane Maria ravished the island and left behind an unprecedented amount of rainfall, with the municipality of Caguas measuring almost 38 inches (Pasch, Penny, and Berg, 2017). For nearly eight long and ruinous hours of traveling almost 100 miles in a diagonal pattern, Hurricane Maria left Puerto Rico from the northwest coast exiting through the towns of Arecibo and Aguadilla at 1400 AST that afternoon. After its final passing, it was evident that Hurricane Maria was a much greater force than many had initially anticipated.

**In Comparison to Other Historic & Recent Hurricanes**

San Felipe Segundo (St. Felipe II) Hurricane

The San Felipe Segundo Hurricane is also known as the Okeechobee hurricane of 1928, which also made landfall in Florida after hitting Puerto Rico. Hurricane St. Felipe II was a Category 5 Hurricane with wind speeds up to 150 miles per hour that claimed the lives or more than 300 recorded; however, the actual number may have reached into the thousands. Hurricane

Figure 2: The figure above is from the National Weather Center Report on Hurricane Maria that shows a radar image of the storm just before making landfall in Puerto Rico.
St. Felipe II caused up to $50 million in damages in 1928 (Schwartz, 2005). That total is equivalent of $726 million in today’s U.S. dollars. Before Hurricane Maria, Hurricane St. Felipe II was known was Puerto Rico’s worst and deadliest hurricane in history, not only damaging homes on the island but especially the coffee plantations that cost Puerto Rico its title as being one of the major coffee exporters at the time. The damage from Hurricane St. Felipe II came be seen in Figure 3 below.

![Image of palm tree tilted by strong winds]

Figure 3: The photo above was taken by Ivan Tannehill, showing the intense winds that Hurricane St. Felipe carried, powerful enough to put sheet metal through palm trees.

After Hurricane St. Felipe II, a hurricane of similar force, it took Puerto Rico over ten years to recover. Based on that comparison, it is likely that full recovery from Hurricane Maria will also take at least a decade.

Hurricane Irma

Hurricane Irma was a Category 5 hurricane that passed 50 miles off the north coast of Puerto Rico on September 6, 2019, just fourteen days before Maria made landfall. Although Irma missed the majority of the island as seen in Figure 4 below, the southern eyewall of hurricane
Irma, which houses the most powerful winds directly, impacted the islands of Vieques and Culebra, which are still recovering today.

Only in 2019, was non-generator produced electric power restored to both islands (Associated Press, 2019). The impact of powerful winds of almost 100 miles per hour, 10-15 inches of rainfall, and storm surges that caused waves up to 30 feet, left almost 1 million Puerto Ricans without power (Cangialosi, Andrew, Berg, 2018). With the passing of Hurricane Irma, this meant that Puerto Rico had less than fifteen days to prepare for an even greater and more powerful storm while still trying to recover from the previous one. I believe it was due to Hurricane Irma and the destruction left behind from that storm that Hurricane Maria caused so much destruction to the island of Puerto Rico.
**Hurricane Maria’s Media Coverage**

Much media coverage focused on the devastation that Hurricane Maria caused in principal tourist destinations such as San Juan. This was expected as San Juan is not only the capital and home to the Puerto Rico’s largest airport, but also the center of the island’s tourism and the island’s main port. Unfortunately, it was hard for the media to show the world the smaller and poorer towns up in the mountains and down in the valleys where there was considerable destruction but were not highlighted in the media as many were inaccessible. The island’s top news station, WAPA TV broadcast before, during, and after Hurricane Maria, even after the island lost power and Puerto Ricans on the island could not see their broadcast. In their special, “Detrás del Huracan Maria,” the anchors discussed how difficult it was for them to be giving the worst news to their island but that they knew it was their duty to broadcast this historic event. CBS Journalist and News Correspondent, David Begnaud, also make it his duty to broadcast the aftermath of Hurricane Maria to Puerto Ricans everywhere, especially in the United States. Mr. Begnaud was on the island of Puerto Rico for more than two weeks since Hurricane Irma, bringing coverage to the world, showing Puerto Rico’s struggle with Mother Nature. One year after the hurricane, Mr. Begnaud, released a special called, “Puerto Rico: The Exodus after Hurricane Maria,” interviewing families who are continuing to tell their stories of struggle and survival. The Puerto Rican community will always be grateful for the work that David Begnaud did for the island of Puerto Rico, bringing the coverage not only on tv but through social media. Puerto Ricans here in the U.S. could ask David for help in finding their grandparents and bring messages of help to the people. It was through his passion for the island of Puerto Rico, to bring people justice and truth that he was honored with the George Polk Journalism Award in 2018.
An Island in the Dark and Unrecognizable

Many island residents did not recover the power lost during Hurricane Irma before Hurricane Maria ripped through the island completely knocking out the island’s power grid leaving 3.4 million residents in the dark. Figure 5 below, shows how the island of Puerto Rico looked in the summer of 2017 and how Puerto Rico looked only five days after Hurricane Maria.

Figure 5: The figure above from NOAA shows satellite images of power in Puerto Rico before and after Hurricane Maria.

The light that could be seen from space was from generators. As can be seen, in the capital of San Juan, five days post Hurricane Maria, there was already power. San Juan is the most well-known city in Puerto Rico, as it houses the airport, the Port of San Juan, and the heart of Puerto Rico’s tourism. It is evident in the photo, that the first city that needed power, was the capital; however, unfortunately, much of the rest of the island, especially western Puerto Rico, would suffer in the dark for quite some time. Living without electricity for months is a thought that many could not imagine, but some Puerto Ricans, it became their reality. Some on the western side of Puerto Rico lived without power for almost two months, where some for towns like
Cayey, a town closer to the eastern central part of the island, or Guaynabo, a municipality just south of the capital of San Juan had to continue life without electricity for more than 6 and 8 months.

Through constant news broadcasts, people were able to see the path of destruction environmentally to the flora and fauna as well as infrastructurally throughout this beautiful island. Endless amounts of trees and power lines covered the streets of the island, blocking access to many municipalities and neighborhoods especially on the western side of the island. People’s homes, and local businesses were damaged due to the violent winds and treacherous rainfall of Hurricane Maria. The beaches along the west coast suffered from high tides, destroying docks and local businesses. Rising rivers, flooding, weakening dams, and mudslides proved to be risks for those everywhere especially in the southwest areas of Puerto Rico, from the top of the mountains to the depths of the valleys. Figure 6 displays photos of the damage to my family’s hometown of Hormigueros, Puerto Rico, where trees and powerlines made access to the roads difficult, where figure 7 shows the rising rivers and mudslides in Hormigueros and Mayagüez, Puerto Rico.

![Figure 6: In the figure above, the municipality of Hormigueros after Hurricane Maria covered in trees and power lines can be seen. Photos seen here were taken by Yadira Torres.](image)
Figure 8 shows Boquerón, Puerto Rico, one of the most popular beaches on the western side of the island, before and after Maria’s powerful winds and rainfall made landfall.

Puerto Rico’s ecosystem especially found in El Yunque, the only tropical rainforest in North America, also took a toll following Maria. The habitats of various animals including manatees, leatherback turtles, and especially the wild Puerto Rican parrots were also affected. The wild Puerto Rican parrot, scientifically known as *Amazonia viatta*, is Puerto Rico’s only native bird and were already a critically endangered species before Maria. These parrots were being conserved exclusively in the only United States tropical rainforest, El Yunque, and more
recently the Río Abajo State Forest (Leibach, 2017). About 400 of the captive birds and about 75 of the 150 wild birds that lived the Río Abajo State Forest survived the storm. In El Yunque National Forest, the number of parrots that were located after Hurricane Maria was about 56 (Associated Press, 2018). The storm overall took a toll on the landscape of El Yunque. Many say that El Yunque was unrecognizable, looking almost burned, with much of the vegetation destroyed as seen in figure 9 below.

Figure 9: The figure above shows El Yunque National Forest before and after Hurricane Maria.

The forest’s beautiful canopies were lost and El Yunque lost more than one in every ten trees (Beeler, 2018). Rainforest ecologists say it could take between 50-60 years for El Yunque to fully recover from the devastation it withstood the day of Maria, but only if the rainforest does not get devastated again from other storms like Maria before then (Beeler, 2018). If so, the projected time for El Yunque to be flourishing as it once was, could be closer to one-hundred years. Following Hurricane Maria, the agricultural infrastructure of Puerto Rico was suffering. Much of Puerto Rico’s coffee and livestock were lost, and the total agricultural loss exceeded more than $245 million after both Irma and Maria (Clavell and Rodriguez, 2017).
The Search for Basic Necessities after Maria

After hurricane Maria, it seemed as though people were prepared for one week following the storm, but supplies were quickly running out. Every day, the shortage of supplies was increasing. In figure 9, scenes from grocery stores in Mayaguez, a city on the west side of the island, showed the food shortage that was occurring.

To find gas, my cousin and her family would wake up before sunrise as early as 3:00 and get in line at the gas stations. Many would stay in line all day, waiting for gas, as it was impossible to predict when the gas trucks would come to refill the gas stations. Many would leave their cars and walk back home to save their spots in line until it was their turn. Rationing is a term not commonly used in today’s society. Just as during the Great Depression and World War II, everything in Puerto Rico was being rationed and was limited. For Hurricane Maria survivor, Yadira Torres from Hormigueros, she says the hardest things during the months after the Hurricane, were finding gas and potable water, and ice was nearly impossible to obtain. Gas was limited to one car per family, one case of water per family, and one bag of ice per family, if you were lucky enough to grab one before they were gone. The line would begin at 1:00 a.m. in the
hopes that there would be one bag of ice left by the time it was their turn. Those with elderly and sick family members, who needed electricity for their medical equipment, or ice to keep medications cold were given priority; however, not everyone who needed the supplies was able to get them either. According to Yadira Torres, it was not until one week after the Hurricane that supplies such as food and water began to arrive to the west side of the island. The east coast, where the capital San Juan, the tourist center of the island lies, began to have help within hours of Maria leaving the island. Due to road conditions, the millions of trees, flooding, and power lines down in the streets, getting help to the western side of the island was not easy. Fast food restaurants were able to function with generators to provide ice and food to those in their towns who were in need for as long as they had supplies. Yadira said that every municipality was responsible for their residents. It was the municipalities that gave out potable, clean, and safe drinking water. Unless the residents had proof that they lived in that municipality and had proof of identification, residents were not able to obtain bottled water or food. The food was limited to one box of food per person in the car with no extras. For others, such as Yamil Lucena originally from Lares, Puerto Rico, a town located northwest from the center of the island, said how the biggest hardship for his family was not being able to communicate with each other due to the cell towers being damaged. Many residents in Western Puerto Rico lacked cell phone service for almost two months; during that time, they had to drive considerable distances just to find a signal. On the Eastern side of the island and San Juan specifically, cell phone service was available within days or weeks of the hurricane. As many Puerto Ricans still have landline phones, this made it harder for Puerto Ricans outside the island such as the United States to contact their family members. For instance, I did not hear from my grandmother in Hormigueros for almost 2 months until the landline was repaired close to Thanksgiving. Two months of not
hearing her voice for her to tell me herself how she was doing was a heart wrenching feeling and being more than a thousand miles away from your loved ones with the feeling of not being able to just get on a plane, find them, and help them was unimaginable. Although some regained phone service, others did not until much later. My cousin’s landline was only recently reinstalled in April 2019: 19 months after the hurricane.

**Tourism**

Tourism is important to any island, but especially to the island of Puerto Rico. Tourist attractions all over the island, were suffering. In figure 10 below, it can be seen how many of the tourist’s locations on the western side suffered great damage, that when seen through pictures could draw tourists away from visiting the island.

![Figure 10: The figure above shows various tourist attractions on the western side of the island before and after Hurricane Maria. From left to right there is the Arecibo Observatory in Arecibo Puerto Rico, Crash Boat Beach in Aguadilla, and La Parguera in Lajas, Puerto Rico.](image)

However, three months after Maria, it seemed that Puerto Rico was ready to open its doors again for tourism. Tourism was seen as the best and fastest way to begin to alleviate some
of damage to Puerto Rico’s economy, as the agriculture and pharmaceutical plants would need much longer to recover. Within one year more almost 190 attractions across the island have opened and ready to welcome tourist (Talty, 2018). Since the hurricane, many now want to better Puerto Rico in order to bring more tourism that will help the island. While Puerto Rico was still recovering from the hurricane, “voluntourism” was organized on the island with a focus to rebuild. Tourists were not only welcome on the island as visitors but in addition, of service to the island, cleaning up beaches such as Crash Boat in Aguadilla on the northwest corner of Puerto Rico. With my recent visit to Puerto Rico at the end of 2018, I could see that the tourists are back in Puerto Rico and helping the island return to what it once was.

Emigration to the United States and the Effects on the Island’s Education and Health

More than 150,000 Puerto Ricans have decided to leave their island since the passing of Hurricane Maria in search for a better life (Center for Puerto Rican Studies, 2018). Many left behind the only life and home they’ve ever known. After Hurricane Maria, many Puerto Ricans were not able to go back to work for some time. Due to this and the stress of an unknown future, many decided to immigrate to the United States.

Education System

The education system in Puerto Rico has greatly suffered after Maria. In one year, more than 38,000 students have left the island dropping to a total student population of just above 300,000, causing more than 280 schools to close around Puerto Rico (Chavez, 2018). In Hormigueros alone, a municipality with a population of about 17,000, three elementary schools closed after the hurricane. School closures are not only because of the large decline in the number of teachers and students on the island, but also the budget cuts that have occurred to try to decrease the island’s financial crisis. The number of teachers and other professionals that have
left the island to find work in the United States has caused a gap in Puerto Rico’s education system. Many of those schools now have been left abandoned as there is no use for them. As seen in Figure below, the three schools in Hormigueros that have closed and are now abandoned. It can also be seen and how horses now use the land for themselves.

Some students were unable to attend school for more than 3 months after the hurricane. Therefore, many schools decided it was best to not finish the 2017 semester and begin again in January of 2018. Many students who attended college that suffered damage from the storm had the option to come to the United States to continue their studies until their institution was ready or wait until it was time to go back. Some elected to move while others decided it would be best to stay on the island and continue their lives in the place they’ve always known. Leaving one’s home and family is never easy, but neither was remaining in a broken place and trying to rebuild.
However, many realized that it was the best option and for some the only option left available to them (Begnaud, 2018).

**Healthcare System**

Following the widespread damage done by Hurricane Maria, it was not only the infrastructure that was damaged, the healthcare system also began to see its impact. Yamil Lucena said that one of the biggest effects he saw on the island was the concerns for people’s health. Due to the limited access to food and clean water, the risk of coming in contact with contaminated food and water sources was very high. After Hurricane Maria, there was an outbreak of 121 reported causes of leptospirosis, an infectious disease that is spread through contaminated food and water, which later resulted in 4 deaths (Michaud and Kates, 2017).

Hurricane Maria survivor, and former ICU nurse in a San Germán hospital, Yadira Torres, spoke to me in an interview about her experience during and after Hurricane Maria. Yadira was working the night shift on September 19 before Hurricane Maria. After Maria made landfall that morning, she ended up working at the hospital for over 48 hours, working double shifts and covering for her fellow colleagues who live almost one hour away who could not report to their shifts as the roads were inaccessible due to the amount of trees, power lines, and road damage that had occurred. Many of the island’s hospitals had to close due to their shortage of supplies and use of generators. Ms. Torres reported that at the hospital in San German took in patients from neighboring hospitals to care for their patients. Yadira slept at the hospital on air mattresses in between work shifts but also because the hospital was one of few places with electricity and water thanks to generators as seen in figure 12 below.
Ms. Torres told me about how because the hospitals were one of the very few places with light and water, other residents, with family members in the hospital would take advantage of the water and electricity using it for themselves to take showers. She explained that following the hurricane, only one family member was permitted per patient. However, not all hospitals were not so fortunate. Slightly more than 2 weeks after the hurricane, only 25 out of 69 of the island’s hospitals were working, mostly on generators, which weakened the island’s health care especially in a time of crisis (Zorilla, 2017). However, thanks to the United States Navy, the USNS Comfort Hospital ship, as shown in figure 13, was able to provide treatment for over 1,800 patients, performing over 190 surgeries, providing 76,000 liters of oxygen, and 10 tons of food and water to the people of Puerto Rico (FEMA, 2018).
As with the education system, the “exodus” of people leaving the island, also had an impact on the healthcare system. One group of professionals that immigrated to the United States were doctors. Many doctors felt that it was best to move to the United States for better job opportunities.

One story that highlights the struggles the high-risk group of the ill and elderly is the story of my uncle’s parents-in-law. Both aunt’s parents are bedridden and live in a wooden home at the bottom of a hill. Before Hurricane Maria, my aunt had to move her parents from their home to my grandparents’ home, because it was made of concrete and had more protection. As her parents are infirm, and require air-conditioning, she was concerned about the prospect of no power. Although generators were on short supply, those in higher risk groups, such as the elderly and those who needed medical assistance or electricity to power mechanical ventilators, had
priority to get a generator once they arrived on the island. However, many were not lucky and lost their medications due to the lack of electricity to keep medications cold.

Hurricane Maria’s aftermath on the island’s pharmaceutical manufacturing industry was not only apparent on the island, but also hit closer to home here in Alabama. In North Alabama, the biggest and the only Level 1 Trauma hospital is Huntsville Hospital, and it felt the impact as well. Thousands of patients are seen and treated there, using intravenous or IV bags for IV fluids or other medications. It is one of the most common treatments for patient care and a basic medical necessity in hospitals. The IV bags used in many hospitals come from the company, Baxter International Intravenous Solutions Corporation, whose manufacturing plants in Puerto Rico were damaged by intense winds during the storm. This caused an even greater impact on the already present IV bag shortage; the number of IV bags that were being produced and exported to various areas in the United States, especially six months after the storm was reduced (Ecker, 2018). In addition to the IV bag shortage, Maria also affected the production of other drug medications such as for diabetes, heart disease, and cancer (Konrad, 2018). Hospitals around the country, even those in North Alabama, had to take precautions regarding the number of IV bags that were being used as it was unknown how long the shortage would last.

The Uncertain Death Toll

The original death toll reported was only 64 people, however after much investigation done by George Washington University in partnership with those at the University of Puerto Rico Graduate School of Public Health, it was reported that the best estimate for those that died due to Hurricane Maria between September 2017 and February 2018 was 2,975 (George Washington University, 2018). The report showed that the group that was affected the most was the poor and the elderly. My uncle’s parents in law who are more advanced in age and health
were bedridden had to be moved from their home to my maternal grandparent’s house to be
cared for. The report showed that it was this group, the elderly and the poor who were most
affected by the storm and because of the damage surrounding the smaller towns, the lack of
resources in the smaller hospitals, and the distance to the larger hospitals could have played a
factor in why the death toll increased by more than forty-five times the original number.

**Maria’s Effect on Puerto Rico’s Economy**

With an already tumbling economic crisis on the island of over $74 billion dollars in
debt, Hurricane Maria only worsened Puerto Rico’s financial situation. The overall total of
damages that Hurricane Maria caused only to the island of Puerto Rico, reaches to over $94
billion. With Puerto Rico’s already rising debt and declaration of bankruptcy, has made the
recovery process much longer for the island. President Trump in 2019 decided that Puerto Rico
“had been given enough relief funds.” However, compared to other relief funds given during the
Hurricane Harvey and Hurricane Irma, Puerto Rico’s funds are still below average. Puerto Rico
has asked for $94 million in relief funds from the government but has so far only gotten about
$30 billion. Nine days after Hurricane Maria, only 1.6 million meals, 208 million liters of water,
and 5,000 tarps had been delivered to the island, whereas the supplies delivered after Hurricane
Harvey and Irma, totaled to more than 16 million meals, 11.5 million liters of water, and 118,000
tarps (Einbinder, 2018). In the CBS News Special by David Begnaud, “Puerto Rico: The exodus
after Hurricane Maria,” he spoke with FEMA director of Puerto Rico’s Hurricane Recovery
Efforts, who told Mr. Begnaud that after Irma, FEMA delivered their help to Puerto Rico, but
that because of that they could not be as prepared for the coming of Hurricane Maria. However,
no one could have been fully prepared for the force that was Hurricane Maria. From FEMA,
Puerto Rico received, $1.8 billion in Small Business Administration loans and $1.4 billion in
individual assistance to over 460,000 homes, while also having repaired over 80,000 homes in Puerto Rico (FEMA, 2018).

**Hurricane Maria Recovery**

This was not Puerto Rico’s first encounter with a Category 5 Hurricane. Where in 1928, Hurricane St. Felipe II and most recently before Hurricane Maria, Hurricane Irma, the amount of recovery that has been needed following Hurricane Maria has been unprecedented. We have already seen how it has taken over 18 months to fully restore the island’s power grid giving power back to the entire island. However, there are days with power outages where residents can be a few hours to even days without electricity.

The island of Puerto Rico still has a long road to recovery ahead. It is not only rebuilding what was lost, but building better for the future, so that in the event of another powerful storm, the impact of the damage will not be as significant as it was for Hurricane Maria. It has been shown how even cities in first world countries such as in the United States, it can take more than ten years to fully recover from a devastating storm, looking back at New Orleans after Hurricane Katrina. This shows how serious natural disasters can wreck a community and leave a deep and lasting impact. During this recovery period, there was the discussion about whether Puerto Rican people got the help and relief efforts that were needed after the hurricane. Many may not think so, but others would disagree. Ricardo Medina, got a plane from the northeastern United State to his hometown of Yabucoa, where Hurricane Maria first made landfall, in search of his parents, discussed with me in an interview the aftermath he witnessed after making it to his home. He describes the scene he saw as, “it looked like a battlefield, trees fallen everywhere, power lines dangling and lying on the roads, roads damaged, like nothing I’ve ever seen before.” To Mr.
Medina, he believes the help did make it to Puerto Rico, but that no one could be ready for the amount of devastation that Hurricane Maria caused, no amount of help would have been enough.

**From Alabama to Puerto Rico**

One relief effort, that was made more personal was how the Puerto Rican community in North Alabama and the Tennessee Valley united to help the island that they cherish so much. Mr. Yamil Lucena, is originally from Lares, Puerto Rico, a town located northwest from the center of the island. He is an engineer and owner of Dolce Pan, a Puerto Rican Bakery in Huntsville, Alabama. He discussed with me how he felt the recovery efforts did arrived in Puerto Rico but not as fast as needed. As Mr. Lucena said, “it was a combination of bad administration with bad logistics,” that was the major cause of the problems that occurred while trying to get help for Puerto Rico. He explained how he felt that the western side of the island was not getting the same amount of help as the eastern side, and therefore, had the desire to find a way to help his fellow “Boricuas,” his fellow Puerto Ricans get the resources they deserved. Mr. Lucena sought out Puerto Ricans and non-Puerto Ricans to see what could be done for their island. He partnered with the American Red Cross to raise $150,000 to buy a new Emergency Response Vehicle (ERV) for the island of Puerto Rico as only one out of the islands three vehicles from the 1980s was barely functional. Mr. Lucena felt that being able to provide a new ERV for the island of Puerto Rico, was the best way to provide that help to his people. We discussed how people from different backgrounds came together to support this cause of helping friends and family back home. The main message was how by being a Puerto Rican here in the United States, we felt that it was our duty as Puerto Rican and as a human being to help our fellow brothers and sisters in their time of need, even if we could not be there on the island directly helping them. Yamil visited his home about 2 months after the hurricane, and shares it was depressing to see. That
although it was evident that progress was being made, the devastation marked by Maria was still there and the worry that Puerto Ricans had about how long it would take to return to “normal.” With the unity of 40 Puerto Ricans and other non-Puerto Ricans from North Alabama and Tennessee Valley, including my family, and in partner with Colsa Corporation and other contributors, not only was the $150,000 raised to buy a new ERV but also dozens of cases of water, food, and hygiene supplies were delivered to the island following the hurricane. In January of 2019, Mr. Lucena and those who led this movement delivered the Emergency Response Vehicle to Puerto Rico as seen in figure 14, and according to WAPA TV, it will be apart of more than 20 emergency calls every month and be present when necessary in partner with the fire departments (Vázquez, 2019).

Figure 14: In the figure above taken by WAPA TV, Yamil Lucena can be seen at the unveiling of the Emergency Response Vehicle for the American Red Cross Center in Puerto Rico.

#PRSeLevanta

After Hurricane Maria, #PRSeLevanta, or “Puerto Rico rises,” was a movement that spread over all social media showing the world that Puerto Rico will not be torn down by this event. Not only
did all Puerto Ricans want to help, but those who have a platform and can use their voice to raise awareness about events that are important to them especially lend a hand. Athletes such as Major League Baseball stars such as Enrique “Kiké” Hernandez designed a shirt pictured below with the phrase “Puerto Rico Se Levanta,” or “Puerto Rico rises,”, to raise funds for Puerto Rico relief efforts, raising over $225,000. Former Yankees catcher, Jorge Posada with his wife, began a campaign that raised over $110,000, while former Puerto Rican baseball all-star, Carlos Beltran, donated $1 million of his own money and started a relief fund where over $1.3 million were raised. Other players such as St. Louis Cardinal catcher, Yadier Molina raised over $50,000, and National Basketball League, Dallas Mavericks player, JJ Barea was able to use the team’s plane loaned by Mavericks owner, Mark Cuban, and travel to Puerto Rico days after the hurricane with emergency supplies. Various of the athletes are pictured in Figure 15.

Puerto Rican artists including Ricky Martin, Marc Anthony, Ramón Luis Ayala Rodriguez also known as Daddy Yankee, and Lin Manuel Miranda also began relief campaigns to raise money, host a relief concert to benefit Puerto Rico’s relief fund, arrive to the island to personally deliver
food and water, or create a song called “Almost Like Praying,” dedicated to their island, where all profits went to hurricane relief efforts. Some of the artists are shown in Figure 16 below.

Figure 16: The figure above shows Puerto Ricans artists Ricky Martin and Ramón Luis Ayala Rodríguez (Daddy Yankee) when they were in Puerto Rico following Hurricane Maria delivering relief efforts.

**Conclusion**

**Hope for the People of Puerto Rico**

It has been shown through photos and interviews how there were differences in the effects and relief efforts between two the western and eastern part of Puerto Rico. However, after Hurricane Maria, the one thing that the Puerto Rican people were looking for, more than gasoline, food, or water, was hope. Hope that help would come, hope that their island would get better, and hope that the world would hear their stories. In figure 17 below, we see how an uprooted tree, a symbol of destruction and tragedy has been painted with the Puerto Rican flag and turned into an artwork and symbol of hope and love for the island.
This piece has been left there to show that the people of Puerto Rico were pushing to spread hope for others on the island, while also showing the rest of the world that they would not be defeated by that natural disaster. In an interview with Hurricane Maria survivor, Yadira Torres, she discussed how the one beautiful outcome that came from the storm was the unity that occurred between every Puerto Rican. Many set aside any differences between family members, neighbors, and friends. It was the realization that being together in difficult times, cherishing their time together, and be grateful for those that are here and while remembering those lives that were lost. Hurricane Maria, cultivated new and stronger relationships. Numerous people feel that Hurricane Maria was the event that needed to happen to show not only the country of Puerto Rico but also the United States and the world that change is needed in Puerto Rico. As shown in mural painted by a Puerto Rican painter, Hector, in figure 18, “Maria is history, we are the present.”
Puerto Rico is Rising Again

If there is one thing that I learned from visiting the island recently for the holidays, is that the best way to help Puerto Rico in its continuing process is to visit the island. Become a tourist by visiting the best tourist areas such as the Observatory in Arecibo, the famous beach in Aguadilla, Crashboat Beach, The Guanica State Forest and Biosphere Reserve, the “surfing capital of the Caribbean” in Rincon, and El Poblado de Boquerón in Cabo Rojo and see “El Muelle de la Libertad,” as shown in figure 19 below.

Figure 18: The figure above shows a mural done by Hector Collazo Hernandez, showing that Hurricane Maria is history, but that Puerto Rico is the present. Photo taken from HectorPR on Instagram.
Channel your inner Puerto Rican and become a local by supporting local businesses that are continuing to rebuild their lives, places that natives are fond of. Figure 20 shows how a dock and walls in El Poblado de Boquerón were damaged during Hurricane Maria and the ruins still remain today.

Figure 19: The figure above is a photo of “El Muelle de la Libertad,” a top tourist attraction in El Poblado de Boquerón in Cabo Rojo, Puerto Rico. Photo taken by Wilson Justiniano.

Figure 20: The figure above shows a dock and concrete structure in Boquerón, Puerto Rico that was damaged during Maria and as of December 2018 still there today. Photos taken by Yazmine Justiniano.
As the figure shows today there are murals painted behind the rumble. This serves as a symbol that behind the destruction there is beauty and positivity to lift the people up. During my recent visit to the island, I saw the progress that was being made on the island such as the green vegetation beginning to return as seen in figure 21. However, I also saw that one can still see what is left to be done. One can still see some houses with tarps as their roofs, burned and dead palm leaves still remain, and the mountains are not as green as they once were, also shown in the figure below.

![Figure 21: The figure above shows Puerto Rico as of December 2018. The land is growing again but it still is not as it once was. Photos taken by Yazmine Justiniano.](image)

More than 18 months since Hurricane Maria, it is true that Puerto Rico has been able to show signs of recovery; however, it is also known that there is still a long road to recovery in the coming years. Even today, there are still obstacles; for example, there are cemeteries such as in Lares, Puerto Rico, that cannot be used, the island’s Forensic Department has an overload of people that continues to grow, and relief funds that are mishandled by the government. However, not all that came from Hurricane Maria, is negative. It is true that Hurricane Maria, left its mark on Puerto Rico and will forever be a part of its history, but Puerto Rico has showed the world that nothing can stop the Puerto Rican family. This travesty revealed the resilience that defines the Puerto Rican people and that they will not be defined by the tragedy that was and the damage left behind by Hurricane Maria. They would rather instead be defined by the way that the Puerto
Rican people have turned this event into the realization that change is needed in order for growth to occur for “La Isla de Encanto,” for “The Island of Enchantment.” Puerto Rico may never be what it once was, but those that love the island will make sure that it becomes better than it has ever been.
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