

# The Slow Relief Process After Hurricane Maria

By Diana Galicia, Finance Major

## Background

In 2017, Puerto Rico and nearby islands had suffered two category 5 hurricanes known as hurricane Irma and Maria. Hurricane Irma occurred on September 5th and less than two weeks later hurricane Maria followed. Puerto Rico was affected heavily, and locals had little resources. Although some time has passed since hurricane Maria, Puerto Rico is still recovering from environmental and economic damages. Dr. Edly Santiago, Agriculture Education Department, a faculty member at the land-grant University of Puerto Rico Mayaguez, lived through the 2017 hurricanes Maria, and



Figure 1: Johanna Hamilton photographed on the left, with Dr. Edly Santiago on the right.

## Dr. Edly Santiago's Story

Dr. Edly resides in Mayagüez, a small town on the west side of Puerto Rico. When hurricane Irma occurred, it caused some disruption and passed Puerto Rico. Hurricane Irma mainly caused power outages and water service disruptions. According to Dr. Edly it didn't feel like a category 3 storm. Two weeks later, hurricane Maria caused more intense problems in Puerto Rico. Dr. Edly recalled feeling it before it hit and at that time, she quickly reacted by tying herself on a pole. She later felt it stop and realized the damages that were done. Dr. Edly and her family lived off their vegetation that they grew due to food shortage around the west side of the island. The roads were destroyed and those living outside San Juan, Puerto Rico were unable to seek out resources. Dr. Edly emphasized that all the resources and supplies Puerto Rico was receiving were in the city, San Juan. This didn't help her and others because they had limited gas and road damages. In fact, those living on the outskirts had to stand in line for hours to only receive 20 dollars' worth of gas. The limited gas was due to shortage and fairness to others. However, Dr. Edly's parents lived in San Juan, Puerto Rico and she had contacted them for help. Dr. Edly's father then drove to give gas to Dr. Edly and her family so they could drive to San Juan. Dr. Edly's vegetation was a surviving strategy, and it favored her side. To cope with such damages to livelihoods and food sources, locals opted for the growing of crops. In addition, small businesses struggled to keep afloat and provide harvests.

## Putting in the Work

In the time I spent in Puerto Rico, I had the opportunity to work with Dr. Ricardo J. Colón-Rivera, PhD and Edgardo Gonzalez, MS. As a team we worked on a Pterocarpus/Amphitecna/Anona area that was overgrown with harming vines. We pruned low hanging branches to avoid future vines from climbing up. These overgrown vines are invasive and were affecting the trees and therefore we wanted to help better the conditions. In addition, I had the opportunity to work with the U.S. Fish and Wildlife at Vivero de Pescas de Maricao, a state ran fish hatchery that rears tilapia and bass. A group of students and I helped remove sediment and organic debris from the area to restore adequate water flow to the hatchery. The dam is one of the main resources used for the hatchery and needed restoration after heavy-flow events during the rainy season. The hatchery is also one of the sites for the Puerto Rican Parrot Recovery Program. Lastly, my peers and I worked with biologists from Puerto Rico Department of Natural Resources and University of Puerto Rico Mayaguez to count eggs and hatchlings in artificial and natural nests to spot endangered species in black mangroves along coastal areas.



Figure 5: Picture of mangrove peers with Dr. Ricardo J. Colón-Rivera, PhD and Edgardo Gonzalez, MS.



Figure 6: Olivia Schmidt pictured on the left side, Diana Galicia(me) in the middle, and Sydney Hundelt. This picture was taken in Faro Los Morrillos.

## Back in the Mainland

Ultimately as a business major and hearing from Dr. Edly and Danny Agron talk about the food insecurities and the struggles they overcame changed the way I saw Puerto Rico. Dr. Edly and Danny Agron gave me the opportunity to see Puerto Rico beyond more than just the portrayed image that been created for years. Bringing back these valuable experiences I had in Puerto Rico, will follow me throughout my life. With my degree credibility, I can bring more awareness to these issues and guide others to help communities in Puerto Rico that encounter food insecurities. A non-profit organization would be needed and essential. Overall, Puerto Rico is a place that needs more advocacy and nurturance. In addition, my expectations coming to Oregon State University were getting my degree in Business and working a part time job. I never would have thought that I would be on a life changing abroad trip with other student peers. Puerto Rico gave me the opportunity to think beyond and make connections between agriculture needs in Puerto Rico with a business mindset.



Figure 2: Group picture with Danny Agron Carrero.

## Coconut Farm Journey

A coconut farmer was determined to start his small business following hurricane Maria and Irma. All the coconut trees were destroyed from the roughly 12-acre property in 2017. It takes 3-5 years for new coconut trees to produce, but once they do, they produce year-round. In the meantime, his aquaculture tilapia pond, and variety of innovative ways to sustain and grow his small business have kept this small business owner going. Meet Danny Agron Carrero, pictured in figure 2, the owner of Coconut farm located in Rincon, Puerto Rico. Before hurricane Maria and Irma, Agron was a farm worker for the coconut farm he now owns. He took over after the hurricanes destroyed the previous coconut trees. While we visited Danny's coconut farm, we learned about 4 varieties of coconuts (Puerto Rican, Brazilian, and 2 Filipino). We sampled coconuts, the Puerto Rican variety, and Danny demonstrated how he gets the coconuts from an average 15 m coconut tree. The coconut farm hindered many thoughts of how small agricultural businesses struggled to get back into the industry. Businesses owners gave up their small business because they were unable to continue their business. Others took the risk and opportunity to start from scratch after the hurricanes. Danny Agron Carrero, business owner, had the courage to continue the coconut farm.



Figure 3: Danny Agron Carrero pictured slicing a coconut from his coconut farm.



Figure 4: Danny Agron Carrero climbing an 80 ft. tall coconut tree, on average.

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