



Article

# A Study of Environmental Organizations in Puerto Rico Advocating for Social and Environmental Justice

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**Abstract:** After Hurricane Maria devastated Puerto Rico, we wanted to determine how the islanders viewed environmental organizations as part of an effort to understand the relationships between attitudes, institutions, and environmental and social justice issues. As a category 5 hurricane, Hurricane Maria was one of the strongest to hit Puerto Rico. Yet, the US mainstream media coverage of this and other environmental issues was lacking. From a total of 90 environmental organizations in Puerto Rico, we surveyed 19 that were active in the southwest of the island. We asked: (1) How do local people view environmental and social justice issues and (2) given their organizations' efforts to deal with these issues, what are their successes? To address these questions, we developed a survey in English and Spanish and conducted personal and online interviews with 30 relevant individuals. Their most successful outcomes included: (1) educating and creating greater awareness of environmental issues; (2) introducing environmental changes into their communities; and (3) becoming and surviving as economically sustainable organizations. The results inform our understanding between environmental organizations and social and environmental justice in Puerto Rico and more broadly, because the organizations surveyed are at the center of fighting climate change and achieving environmental justice.

**Keywords:** environmental organizations; Puerto Rico; island areas; environmental justice; social justice; environmental research; environmental migration; Boquerón; recovery efforts; hurricanes; earthquakes; economic benefits; University of Puerto Rico-Mayaguez; COVID-19



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## 1. Introduction: The Context

It is important to bear in mind the larger context within which this study took place. Not only was it conducted during the COVID-19 pandemic, i.e., 2021–2023, but also the context within which Puerto Rico functions must be borne in mind, for this context is unique. It is referred to as “the oldest colony” for Columbus arrived there on his second voyage to the new world in 1493. And, it remained a colony of Spain until the US took over in 1898 as a result of the Spanish–American war. Many assumed that it would then be granted its independence. However, it still remains an unincorporated territory of the U.S. and is often treated differently from states in the US. Although our personal interviews were very pleasant, this larger context and the sometimes competing political positions held within this political context may influence—even unconsciously—how respondents reply to questions concerning issues of colonialism, extractivism, corruption, and injustice when speaking to researchers from outside of Puerto Rico. So, some of the quotes from our respondents, noted below, may be oriented towards environmental justice struggles and may reflect the organizations' work against colonialism, extractivism, corruption, and injustice, but this may not be explicitly stated. In essence, organizations may not put these topics upfront, but these issues may be more or less present in their orientation and analysis

and may be illustrative of issues related to power relations, coloniality, inequality, and environmental justice/injustice.

Why choose Puerto Rico? As a category 5 hurricane—there is no category 6—Hurricane Maria was one of the strongest hurricanes to hit not just Puerto Rico, but the US as a whole. Indeed, only four have ever been identified as hitting the US mainland. Puerto Rico was also devastated by earthquakes that have specifically impacted the south and western parts of the island. Despite the initial statements that Hurricane Maria had not caused many deaths or casualties (the initial figure revealed was 6 deaths), the then President Trump, when he visited Puerto Rico, announced the death toll to be 16. Shortly after Mr. Trump departed the island, after throwing paper towels at the crowd that had gathered to hear what aid might be forthcoming, Governor Ricardo Rosselló told a news conference in San Juan that deaths related to Hurricane Maria had risen to 34 (Landler 2017). But a Harvard study published in the *New England Journal of Medicine* found that 4645 people had actually died as a result of this category 5 hurricane (Kishore et al. 2018). In addition, major news outlets and academics reported on these effects, e.g. The New York Times reported that there were thousands of people sleeping outside for fear that another earthquake might destroy their homes and themselves in the process see (Robles 2020): (Bonilla and LeBrón 2019): (Hernández and McGinley 2018): <sup>1</sup>.

Despite the lack of attention at the executive level during this time, this extreme weather event prompted many Puerto Ricans to consider environmental change more deeply. Although a number of community-based environmental organizations had been in existence for some time, this event, and this response at the executive level, reinforced, for many Puerto Ricans, the lack of support (relative to states and state aid) that has often been felt within the “unincorporated territory” of Puerto Rico (Molinari 2019): (Walker and Zolan 2019). As a result of these events, we and a number of other stateside groups became interested in the role that existent environmental organizations in Puerto Rico play in advocating for social and environmental justice.<sup>2</sup> Consequently, our research questions are:

(1) How do people on the ground, i.e., community-based environmental organizations, view environmental and social justice issues in Puerto Rico? And (2) given these organizations’ efforts to deal with them, what do they consider their successes to be? Although posed to Puerto Rican organizations, these questions are also relevant to community-based organizations *outside* of Puerto Rico. Indeed, our review of the literature in this area underscored this to be a research area of interest.

## 2. Literature Review

Our review of the literature did not find that studies similar to ours had been conducted in Puerto Rico. However, we found a number of studies that examined community-based environmental organizations, i.e., non-governmental organizations, in other geographical areas. And, we found that many of these studies concluded that such organizations have had a positive impact on educating the local communities about environmental challenges and related environmental justice issues. For example, Hidayat and Stoecker (2018) studied a community-based environmental organization in Monona, Wisconsin, a small town with a population of about 8779 inhabitants in 2021. They conducted a city-wide survey that assessed the familiarity of residents with the environmental organization in the town, i.e., “The Natural Step (TNS) Monona” organization. And, they concluded that this organization had effected a statistically significant difference in the knowledge about sustainability amongst Monona residents and encouraged their civic environmentalism. They concluded that there was a positive association between familiarity with the work of TNS Monona and participation in sustainable actions, e.g., composting, rainwater harvesting, and growing food.

In addition, Feng et al.’s (2018) review of 63 works that were related to community resilience, disaster risk reduction, and informal education—and that were conducted in the period of 1950–2017—also suggests that developing resilience and relief to natural disasters

could benefit from the utilization of informal methods of education, which are the methods generally utilized by community-based and/or non-governmental organizations. They were also the methods used by the environmental organizations in our study.

[Sterbuleac and Toma's \(2019\)](#) literature review also found that academic environmental organizations (AEOs), which embody a number of the characteristics of community-based organizations, are also more effective than the traditional environmental education that is offered at the university level. For example, like many community-based organizations, they engage students in field trips, workshops, and real-world projects, while working with policymakers, advocates, and other community members. In addition, these AEOs utilize a variety of strategies to educate students and form relations with communities, which they found provided them with considerable potential in the "management of current environmental challenges" ([Sterbuleac and Toma 2019](#), p. 93). [Novellino and Dressler \(2010\)](#) also underscored the more effective role of "hybrid" non-governmental organizations (NGOs), i.e., community-based organizations, compared to the government models that were developed in Palawan Island, The Philippines, for development and conservation. Interestingly, [Pacheco-Vega and Murdie \(2021\)](#) also found, in their analysis of the CO<sub>2</sub> levels in countries that are part of the The Organisation for Economic Co-operation and Development and those that are not, that non-governmental organizations (or community-based organizations) are more often found in countries with lower CO<sub>2</sub> levels and where citizens have more political civil liberties.<sup>3</sup>

Lastly, [White et al. \(2023\)](#) were specifically interested in the effects of collaborative wildlife conservation efforts, and they conducted surveys in Grand Chaco, Paraguay, Kenya, Tanzania, Mexico, and Argentina. They found that the role of community-based non-governmental organizations underscored the significance of the role of community-based individuals working in the communities they studied. Their study examined the successes of community-based organizations working with other NGOs, government agencies, indigenous groups, or powerful actors in their respective communities, and they found that the relationships developed among these different agents were long-lasting and had been developed over some years. They also found that many of the organizations saw trust and meaningful interpersonal relationships with other "agents for change" as significant to their work. Statements similar to these were also echoed in our study.

### 3. Our Research Question

Having ascertained that there were more than a few environmental organizations involved not just in the hurricane and earthquake recovery efforts in Puerto Rico, but also in more general environmental issues, we set about contacting them. Although we asked many questions in our questionnaire, we focus in this study on the following: (1) How did those working with community-based environmental organizations view environmental and social justice issues in Puerto Rico? (2) Given their organization's efforts to deal with environmental issues, what did they consider their successes to be? The other questions asked were approved by our Office of Institutional Research and are available from the authors upon request.

In approaching our two research questions, we were aware of the fact that interdisciplinary research such as the one conducted in this paper might also be relevant to other island areas that have dealt with recent environmental change and environmental migration in the US and globally. Indeed, [Walker and Bellingham \(2011\)](#) note in their book *Island Environments in a Changing World* that islands all around the globe and their populations are particularly vulnerable to the effects of climate change. Both Puerto Rico and the Canary Islands, like other islands, face natural disasters from climate change. See [García-Romero et al. \(2023\)](#) and [Lloréns \(2019\)](#) as well on this. Consequently, the co-author of this paper is also utilizing the materials developed in this Puerto Rico study to conduct a similar, comparative study in The Canary Islands. We hope to compare the results of both studies in the future. The Canary Islands' geographical and sociopolitical status is remarkably similar

to that of Puerto Rico. However, there are also some differences, such as the devastating volcanic eruptions that have displaced many people in the Canarian community.<sup>4</sup>

#### 4. Research Materials and Methods

In order to pursue our research questions, we developed a lengthy questionnaire consisting of 49 open and multiple-choice questions. It was approved by our university's Institutional Review Board, and we administered it to all of our respondents. We also had the questionnaire translated into Spanish, both in New York City and in Puerto Rico, so as to capture any subtle differences in Caribbean Spanish and the standard university-level Spanish taught in the US. In addition, we developed "Abstracts" of our research project and purpose, which were similarly translated into Spanish and were extensively used in our meetings in Puerto Rico. This helped respondents to better understand the purpose of our study before agreeing to participate in it.

We worked collaboratively with the University of Puerto Rico-Mayaguez, Sea Grant program, and with Sagrado Corazon University to contact many of the environmental organizations in our sample of 30 respondents. We also spent a considerable amount of time on our own identifying other environmental organizations by speaking with residents and businesspeople in the study area, and we attended numerous webinars that focused on environmental issues in Puerto Rico. This also contributed to the development of the survey questionnaire and the questions that were asked.

Interestingly, when first beginning this project in 2019, we googled "environmental organizations" in Puerto Rico and only 21 organizations appeared in *all* of Puerto Rico—not a large number given the devastation that occurred. But even this small number may have been inaccurate. For, as was noted in our Google search then, it was possible that a number of these listed organizations were just tax shelters, i.e., they had only one individual listed as being employed or a member of the organization. Yet, in our work, we were able to identify 80 actual, functioning organizations carrying out important environmental projects in Puerto Rico and educating others about environmental justice. And this was the case even though we focused on environmental organizations *outside* of the more populous San Juan metropolitan area. This suggests communication and media issues were also present then. What follows is a typology of the organizations included in our sample.

#### 5. Typology of Environmental Organizations

We found in our personal interviews that many of the organizations that we studied came about initially through simple community involvement, and because of individuals who decided to "make a difference" or address a specific environmental issue. The organizations we focused on were in the less urbanized western part of the island, where many of the organizations did not have their own website. After reviewing the materials of each organization, we found that all of the organizations surveyed were conducting a variety of projects and programs, but all were involved in community-based work that included education regarding environmental justice issues, the development of eco-tourism in relation to the local community, and conservation of the environment.

In accord with the IRB (Institutional Review Board) requirements, we cannot reveal the names of the organizations, but we can categorize the nineteen organizations that we surveyed into the following three categories: (1) for-profit organizations, (2) public sector organizations, and (3) non-governmental organizations. The for-profit organizations focused on eco-tourism and how the travel and tourism industries can be more sustainable regarding the energy and water systems in their lodgings. The public sector organizations included government-funded efforts to conserve the environment. And the non-governmental organizations, which accounted for 73.7% of the organizations surveyed, were based on community efforts to conserve, educate, and create environmentally friendly physical spaces, communities, and businesses. The common themes among our respondents showed that there was an emphasis on education, community involvement,

and research among the different disciplines to be more eco-friendly in the southwest of Puerto Rico.

A total of 19 organizations were surveyed, but in some cases, we interviewed more than 1 respondent from the same organization; so, the total number of respondents was 30. After identifying the organizations, we set about contacting these organizations and interviewing them either personally or via our online Qualtrics survey, which we developed in English and in Spanish.

## 6. Our Respondent Sample

**Language:** The survey was developed in English and translated into Spanish. A total of 30 individuals responded to our survey, which was conducted both online and in person in Puerto Rico. Of this group, the majority (66.7%) replied in Spanish. Both women and men constituted approximately equal proportions of the total sample, and substantial majorities of both the Spanish (SLR) and English language (ELR) respondents advanced onto post-secondary education. The occupations of the respondents varied, with “persons in charge of their environmental organizations” or “in significant leadership positions” constituting the largest share.

**Age:** Age-wise, the group covered many age categories, with the largest age group being 35–44 year olds (Millennials), which comprised 23.3% of the sample. The second largest group was that of the 75–84 year olds (seniors group), constituting 13.3%. It is of interest that, contrary to the general idea that youths tend to be more interested or involved in environmental activities, we found a number of seniors and retired individuals who were involved. This was one of the respondents’ answers regarding his environmental organization:

“Since I retired, I did a lot of backpacking in South America, and I wanted to do something right for the environment. I have to protect my natural resources; I can’t depend on anyone else. I’ve been on renewable energy for over 20 years and wanted my own water source. Rainwater catchment—being retired, after you get past your first step of renewable energy. Right now, we are trying to manage waste.”

Part of this older-age involvement is explained by the fact that some individuals do travel to Puerto Rico to retire, as was the case with the respondent cited. This situation is similar to that of other seniors who decide to travel to Florida for the warmer climate when they retire. But, also contributing to this age differential in our sample is the fact that so many younger Puerto Ricans have had to leave Puerto Rico because of environmental change (See [Matos-Moreno et al. \(2022\)](#), [Vega \(2023\)](#), and [Aronoff and Brown \(2019\)](#)). Indeed, the US Census as well as a number of other studies have found that Puerto Rico’s share of older adults is the 10th highest in the world ([Hernández 2023](#)). This has led to other issues, such as who is left to take care of the elderly? The young have lost jobs, houses, and sometimes families because of the environmental devastation on the island, and they have had to leave to seek jobs elsewhere, i.e., they have become *environmental migrants*. As one very involved environmental leader, now living in the US, described to us: “I could no longer live in a house where I did not have water.”

And this last comment does not address the electric disruption issues that also followed Hurricane Maria and earthquake devastation. Indeed, these were so significant that it led Bad Bunny, who was referred to as “the biggest global pop star in 2022,” to release a music video entitled “El Apagón” (The Blackout), which was a visceral condemnation of the blackouts experienced in Puerto Rico as a result of the environmental shocks and the electrical companies’ inability to respond effectively to them.<sup>5</sup>

The occupation, educational attainment, and socioeconomic status and class background of our respondents varied, with “persons in charge of their environmental organizations” or “in significant leadership positions” constituting the largest share. A substantial majority (76.7%) of the respondents advanced onto post-secondary education, with 40% completing a bachelor’s degree or a professional degree. Also, when we asked “How

would you classify your family's social class when growing up?", we found that 26.7% said that their family was middle class, while the same proportion said their family was working class. A total of 33% of the people surveyed were in positions of leadership as presidents, board members, founding directors, and directors of the press.

## 7. Results

In order to determine what were the major challenges that the environmental organizations have faced in both combatting environmental degradation and achieving environmental justice, and what did not, we needed to determine what issues, problems, or challenges these environmental organizations have had to deal with. The specific issues or challenges that were most often noted and addressed by our respondents were the following in order of significance: 36.70% mentioned "water" issues, how available it was and how contaminated it might have been. Another 16.70% of respondents noted the "lack of jobs or employment," while "environmental issues" were noted by 13.30% of the sample. The lack of "available housing" was also mentioned by 10%, and, a myriad of other issues were noted by another 10% of the sample. Thus, in terms of what issues had been most dealt with, we found that the areas that were most often mentioned were, in order of significance: housing, water, jobs, and environmental issues.

Of interest to us was that, even though these were environmental organizations, "environmental issues" was the third most noted issue, while the first three were basic "bread and butter issues." But, upon reflection, we saw, and the respondents clarified, that these issues were also related to environmental justice issues. For example, why was water no longer clear and free-flowing? And why was the available housing stock now lower than in the past? Clearly, the environmental impact of Hurricane Maria influenced the supply of housing and jobs. Environmental issues were very likely seen as part of secondary effects related to environmental change. For example, Hurricane Maria and the subsequent earthquakes in Puerto Rico were (and continue to be) environmental issues, but these environmental events mean that much of the existing housing is destroyed or damaged, leading to a considerable housing problem in Puerto Rico.<sup>6</sup>

When asked "What issue(s) or problems have you been able to most successfully address in your organization?" and why they thought they had been successful, we received a wide variety of answers, but the following quotes from our interviews provide a sense of the three major themes that were most noted. These are (1) educating and creating greater awareness; (2) introducing environmental changes into the communities they served; and (3) becoming and surviving as an economically sustainable organization. They also provided us with helpful insights into the lives and activities of those involved with environmental organizations.<sup>7</sup>

Those who mentioned (1) education and creating greater awareness said the following:

- "Creating more awareness among beachgoers and shoreline property owners of the problems faced by nesting sea turtles."
- "Having good relationships with the community and keeping volunteers engaged."
- "We are starting to recruit volunteers. That is encouraging."
- "We were able to gather children from the community for summer camp, with about 75 to 80 participants, all under the age of 18."
- "Education and the dissemination of the problem to all sectors, we worked as teams." (This view was repeated by many of our respondents.)
- "We were able to increase community outreach and create working alliances."
- "Also, our educational programs have been very successful."

The respondents who mentioned that their educational programs had been very successful also tended to have excellent facilities for their educational programs—and this likely also contributed to their success, as their facilities were easy to reach and provided other amenities, e.g., bathrooms and materials related to environmental changes.

Somewhat related to education was how one organization member noted that, because they had provided fishermen with information and tools to better deal with climate change,

they were able to catch more or better fish. For example, they identified better areas for fishing. The organization also encouraged fishing by having tournaments, for example, to see who caught the biggest fish, and they involved kids in them as well.

Those who mentioned (2) the introduction of renewable energy or other environmental changes noted, more specifically, the following:

- “Renewable energy generation”;
- “Being able to establish and maintain the first interpretative trails of the Northeast Ecological Corridor Nature Reserve”;
- “Pick up of trash in the beaches, debris, and vegetative material in the communities”;
- “The restoration of assets that are of great environmental and historical value.”

Those who spoke about (3) becoming economically sustainable and surviving as an environmental organization said the following:

- “We have been able to survive economically because we have become economically independent.” (They also indicated that they have received funding from a number of foundations.)
- Another environmentalist put it this way: “el sobrevivir por mas de 30 años” “being able to survive for more than 30 years” (as a community-based environmental organization).

This last theme, which included both economic sustainability as well as economic savings, was a bit of a surprise for us, as it was repeated a number of times, and it is also not a theme that has been paid much attention to in the general media coverage of environmental change. Yet, we heard a number of times how, after moving to more environmentally friendly approaches, both businesses and individual homeowners were paying less for energy.<sup>8</sup>

But, an important component of economic viability is funding. And we also saw the significance of funding when we asked about problems that the organization had had in the past. Funding was the most frequently mentioned, followed by “lack of political support.” How organizations are funded and what challenges these organizations have had to confront is important to understand so as to better appreciate the efforts these organizations have had to make. When we asked them to rank on a scale from 1 (no anticipated funding) to 10 (certain funding), we found a very high proportion skipped this question (26.7%), and very few chose certain funding. More than 1/4 (27%) of the organizations reported a high degree of insecurity regarding future funding (categories 1-4 on the 10-point scale) and another quarter (27%) did not respond. Only 7% of the organizations reported substantial financial security (categories 9-10 on the 10-point scale).

Nonetheless, when asked if they planned to continue their current programs, the majority said they planned to continue or expand their current programs. So, despite the concerns about funding, optimism appears to prevail.

Also related to this more positive attitude, despite the challenges experienced, was the extent to which our respondents saw their successes as being the result of positive social support and the relationships they had with the communities that they served. This was a theme also underscored in our review of the literature. Indeed, when we asked very specifically whether they thought that their organization strengthened social cohesion, 63.3% said “yes.” This view was also reflected in some of the responses that we received when we asked our respondents why they thought that certain programs in their organization had been their most successful. The following responses provide an indication of how the communities that they served appreciated the efforts of these environmental organizations to correct and combat environmental degradation and injustice:<sup>9</sup>

- I think our participants have started to see what we are doing; they are seeing value in it and have expressed interest in being part of it.
- We always come up with new projects or ideas.
- We fought them successfully.
- The community is very interested in informing and involving themselves, and they have a profound desire to manage and collaborate.

- We were able to build trust with the community and those involved.

Respondents also mentioned again the significance of education and the dissemination of problems to, and for, all sectors as well as all working together as teams.

#### *More Pragmatic Views*

But other respondents had more pragmatic views when asked what they thought accounted for their successful programs or activities. For example, one respondent said that they had not previously been connected to the internet and now they were. Another respondent mentioned, in a very “matter of fact” way, the role of connections and money. Also noted was the implicit obligation of all to take personal responsibility for protecting the environment, and consequently their lives and properties as a reason for successful outcomes.

### **8. Discussion: Organizations’ Efforts**

Still, others emphasized the particular efforts or approach that their organization had taken or made. For example, one respondent said, “Because we didn’t just talk”, in other words, just say words, but we also put “manos a la obra,” i.e., “we did the work (required)”. Similarly, another respondent, in explaining why programs were successful, said: “Because we have made these issues visible, and we have educated people about environmental threats and solutions.” Related to this view was that of another respondent, who said:

“Because the community that was impacted was one of neighborhoods forgotten by agencies and businesses, areas where they do not take into consideration the population. They never had a (student) camp of this scope.”

Still, another respondent spoke about how their organization had introduced order into what had become an out-of-control situation in a touristy area. This respondent said:

“It was always a tourist attraction, but it was sometimes non-stop, and we needed to institute laws/regulations, which required businesses and parties to cease by a particular time, generally 11:00 p.m., so that all people could enjoy the tourist area, not just the all-night revelers.”

A number of respondents summed up their views on why the particular actions or programs their organizations had taken had been the most successful by saying the following: “We developed a multiplicity of strategies that have been developed to work on those problems or solutions.” Yet, another respondent just said very simply that “trabajo duro”, or their “hard work”, accounted for their successes.

It is important to note that there were only 30 respondents in this study. This is not a large sample size and might not be representative of the views of the larger population, which makes it difficult to draw broader inferences. However, this research still provides insights into how environmental organizations are working with their communities to improve awareness and education around environmental issues.

In conclusion, the organizations discussed in this paper are community-based organizations that those outside of Puerto Rico may not know very much about. And, what our research has shown to us is that they are very much at the center of efforts to combat environmental change and to educate others about environmental justice, and that in doing so, they have been able to successfully involve the communities that they serve. This has entailed educating the communities to gain a greater awareness of environmental issues in their areas. This, in turn, has resulted in a number of instances of more positive changes for their respective communities. In addition, some environmental organizations have also been able to work within their communities to introduce specific environmental changes that have benefited the community, e.g., the picking up of trash in beaches.

But, this would not have occurred without consistent attention to the issues at hand, “hard work” (trabajo duro), and funding to be able to conduct this important work. Lastly, somewhat of a bit of a surprise to us as researchers, who have been more focused on environmental justice, was how many of those involved in environmental efforts felt



strongly about the *economic* benefits of environmental change. For example, in the final analysis, although expensive to purchase and install, solar panels ended up costing less than the utility company costs over time, for both residences and businesses. Our research also demonstrates the important work these environmental organizations are conducting in their communities to protect their surrounding environment.

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**Institutional Review Board Statement:** The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board of Fordham University (protocol code IRB ID 2125 and 12 May 2022).

**Informed Consent Statement:** Informed consent was obtained by all subjects in the study.

**Data Availability Statement:** The data presented in this study are available on request from the authors due to privacy restrictions.

**Conflicts of Interest:** The authors state no conflict of interest.

## Notes

- <sup>1</sup> Media issues existed both in the US's coverage of the environmental issues in Puerto Rico as well as in Puerto Rico's coverage. On media and communication issues, see [Rodríguez \(2021\)](#) and [Modestti González \(2018\)](#).
- <sup>2</sup> Hurricane Maria and President's Trump's response also encouraged many universities in the US to assist Puerto Rico in this moment of extreme disaster. Similarly, the authors of this research project on environmental organizations were also involved in attempting to develop a project that sought to assist Puerto Rico during this time. This project, known as BEC, or the Boquerón Consortium for Environmental and Social Justice, sought to take US students and faculty to Boquerón, Puerto Rico, a seaside town on the southwest corner of Puerto Rico, where they could work with local/community groups and faculty at the University of Puerto Rico-Mayaguez on environmental issues in this part of the island as well as on the on-going recovery efforts. Because of its distance from the center of governmental and other organizational activities, it is relatively neglected by larger environmental organizations as well as other agencies. As part of this original project, we connected with the Sea Grant Program at the University of Puerto Rico-Mayaguez. This project is still in the process of being developed, but we have secured the use of an all-wood construction, a home that was designed and built by Jonathan Rutherford Falconer III that will provide a place where students, faculty, and interested community members from the US and Puerto Rico to come together to hear talks or view films from those involved in environmental work and in research and, where they can study the local environment, its people, history, and economy. And, it will also serve as a demonstration center to teach about environmentally helpful changes to houses, e.g., the installation of solar panels. Because of Puerto Rico's unique political relationship with the US, and its Spanish-language culture and history, it is considered both a national, as well as an international, destination. So, we saw this initial interdisciplinary research as being useful to other island areas—in the US and globally—that have been similarly affected by environmental changes. Unfortunately, the rise of COVID-19, the continuing post-Hurricane Maria environmental disturbances, and the political and economic financing issues in Puerto Rico's government prevented the original project from moving forward at that time. But, we were able to conduct some of the research presented in this paper.
- <sup>3</sup> Lower CO<sub>2</sub> levels were also found in countries vulnerable to external international pressure.
- <sup>4</sup> By looking at the seven Canary Islands, El Hierro, La Gomera, Tenerife, La Palma, Lanzarote, Gran Canaria, and Fuerteventura, the study will look at similarities and differences between the two—Puerto Rico and the Canary Islands—and their shared history in culture, politics, environment, and language as there is a large research and literature gap on this topic.
- <sup>5</sup> This music video was also short-listed in the "Excellence in Music Video" category at the 2023 Cannes Lions Awards ([Ocho 2023](#)). See also [Herrera \(2022\)](#) and [Aronoff \(2018\)](#), who describe the controversial contractor behind the island-wide blackout.
- <sup>6</sup> On the devastating impact that the subsequent earthquakes had on housing, see [Robles \(2020\)](#).
- <sup>7</sup> The names of those quoted are omitted in the interest of preserving anonymity, as per our Informed Consent Requirements and the ICF, which they signed. Some of the responses have been translated from Spanish into English.
- <sup>8</sup> In addition to these three major themes, one individual also mentioned that they felt that one of their organization's major successes was dealing with political corruption.
- <sup>9</sup> Interestingly, [Robles \(2020\)](#) notes that other researchers have also stressed the significance of social cohesion in Puerto Rico's more rural communities.

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