Cultural Heritage Preservation in the Context of Climate Change Adaptation or Relocation: Barbuda as a Case Study

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CULTURAL HERITAGE PRESERVATION IN THE CONTEXT OF CLIMATE CHANGE
ADAPTATION OR RELOCATION: BARBUDA AS A CASE STUDY

by

MARThA B. LERSKI

A master’s thesis submitted to the Graduate Faculty in Liberal Studies in partial fulfillment of
the requirements for the degree of Master of Arts, The City University of New York

2019
Cultural Heritage Preservation in the Context of Climate Change
Adaptation or Relocation: Barbuda as a Case Study

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This manuscript has been read and accepted for the Graduate Faculty in Liberal Studies in satisfaction of the thesis requirement for the degree of Master of Arts.

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ABSTRACT

Cultural Heritage Preservation in the Context of Climate Change Adaptation or Relocation:

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Martha B. Lerski

Advisor: David Halle

This case study introduces an arts camp methodology of engaging communities in identifying their key cultural heritage features, thus serving as a meta study. It presents original research based on field studies on the climate-vulnerable Caribbean island of Barbuda during 2017 and 2018. Its Valued Cultural Elements survey, enabling precise identification of key tangible and intangible art forms and biocultural practices, may serve as a basis for further studies. Such approaches may facilitate future research or planning as climate-vulnerable communities harness Local or Indigenous Knowledge for purposes of biocultural heritage preservation, or towards adaptation or relocation. I report on findings in which participants identified key cultural heritage elements through drawings, paintings, sculpture, questionnaires and interviews. In this study focused on Barbuda both before and after Hurricane Irma, youth and adult stakeholders identified place-based cultural values, biocultural traditions and legal structures that they wish to preserve.

Keywords: cultural heritage, climate change, Barbuda, art, environmental vulnerability, Local Knowledge, stakeholder involvement, adaptation, culture, Caribbean, documentation, Small Island Developing State
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I presented some findings in November 2018 at The Climate Crisis: A Global Dilemma event, sponsored by the Bangladeshi Students Association, at the University of Connecticut.

Muriel Leung’s 2017 help was invaluable. Bob McCloud encouraged me throughout. Any inaccuracies, misinterpretations or omissions are my own.
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Overview

Preserving cultural heritage in the context of climate change requires an understanding of place-based traditions and values. It also demands physical and intellectual infrastructures to support planning, documentation, sharing of knowledge, and adaptation. This case study illustrates the significance of understanding local cultural heritage values as they relate to climate change preparation, adaptation or relocation. Barbuda’s cultural heritage is heavily influenced by its land as well as its legal traditions regarding the land, particularly the Barbuda Land Act of 2007, which reinforced centuries-old property traditions on the island. Stakeholders identified place-based cultural values, biocultural traditions and legal structures that they wish to preserve.

The art work created by participants during my field work, and the arts camp interactions themselves, confirmed what participants reported in several surveys throughout the course of this case study. Preserving cultural heritage in the time of climate change is a process that must involve local stakeholders (Eakin & Luers, 2006; Climate & Traditional Knowledges Workgroup, 2014; Ataur Rahman & Rahman, 2015; Bradley & Cohen in Faist & Schade, 2013). Such work can be supported by a wide range of disciplinary knowledge concerning the related and interdependent economic, sociological, anthropological, historical, political, religious, legal and environmental issues. I provide templates for further field work and documentation.

At this critical time for the planet and for the preservation of both its people’s cultural heritage and the environment which sustains human and other life forms, this thesis will focus on cultural heritage identification, protection and sustainability—in the context of climate change adaptation or relocation (Advancing Communities, 2017; Asian Development Bank, 2012; Nesbit, 2018; Pilkey, O., Pilkey-Jarvis, L., & Pilkey, K., 2016; Hastrup, & Fogg, 2012). While the United States federal government has recently tried to erase the term “climate change” from
its lexicon (McKibben, 2017), Native American tribes have continued climate adaptation planning (Northern Arizona University, 2019; Advancing Communities, 2017), something that the Environmental Protection Agency (EPA) was doing before 2017, via a once-dynamic case study portal (Climate Change Adaptation Resource Center, 2017).

The thesis is grounded in one completed case study on the rising-seas and hurricane-hit island of Barbuda, which raises some issues likely to face other countries, cultures and peoples as climate change accelerates. The data are pulled from my two art camps held on the island, one in August of 2017, and one in November of 2018. My case study is supported by a review of climate change and cultural heritage literatures, including issues relating to current and impending immigration, economic and other inequalities and vulnerabilities as well as cultural-heritage knowledge systems of indigenous peoples that have the potential to both prevent and remediate climate change damage.

Writing in the *International Journal on Minority and Group Rights*, David Lempert (2010b) urges social scientists and rights and legal activists to take immediate action to identify cultures—imperfect as those measures may be, not as an exercise in creating a perfect document, as “this is not a definitive cultural database and is only a device for the purposes of political protection of groups” (p. 547). His idea of a Red Book is to “standardize and codify the threats to cultures,” and to “establish a baseline of cultural health measures so that liability can be imputed for worsening conditions” (p. 532). Similar identification and classification projects that inspired the Cultural Red Book idea are The Red List of Threatened Species, the Red Book of Endangered Languages, the Re Book of the Peoples of the Russian Empire, and the Minorities at Risk Project. My case study endeavors to extend those aims to assist with proactively protecting
communities’ identified valued elements, and serves as a pilot project through which cultural element categories, arts camp format, and potential repository infrastructure are explored.

As a practicing librarian with a Master’s degree in Library Science and advanced studies in digital libraries, I chose to develop a “Valued Cultural Elements” template to contribute to broader efforts to protect cultural heritage as well as to eventually ground data in vetted, sustainable, interoperable and accessible collection systems (Rhizome ArtBase, 2002; R. Rossanova, Email to M. Lerski. Re: Query re Rhizome’s artist database and selection of which features to preserve, personal communication, December 17, 2018; M. B. Lerski & E. Holdorf, MAD Collection and Conservation Policy re Ephemeral Art, personal communication, November 5, 2018; Museum of Arts and Design. Collection Management Policy, 2008; Getty Research Institute, 2006; Woodley, 2008; Baca, 2003; Harpring, 2010: Tapfuma & Hoskins, 2016).

Along with a 2018 study, “Rediscovering the potential of indigenous storytelling for conservation practice,” (Fernández-Llamazares, & Cabeza), Virginia Nazarea’s 2006 “Local Knowledge and Memory in Biodiversity Conservation,” argues that it is not enough to develop sterile database categories separate from active and ongoing engagement with peoples whose cultures are being documented. Cultural context and nuances grounded in local knowledge systems and communities reflect “interior landscapes” that “are mapped onto exterior landscapes through objects and stories that stimulate sensory recall and affective engagement (p. 330).

The field research component of this paper was conducted under guidance of IRB protocol 2017-0860, “Cultural Heritage Preservation in the Context of Climate Change Adaptation or Relocation: Arts Education in Barbuda.” I completed my case study in Barbuda in November of 2018. My first visit to the island took place in January, 2017, at which time I
toured historic wells with Brooklyn College Earth and Environmental Sciences professor, Rebecca Boger. She was checking water levels as part of ongoing environmental studies on the island through the Barbuda Research Complex (BRC) (Island Studies Journal, 2014). Barbuda, as a flat, erosion and rising-sea and flood-prone island susceptible to damage from Climate Change, was a natural place to conduct my own field studies.

That visit I also participated in archeological excavations through the Barbuda Archeological Research Center (BARC), a subset of the BRC, and also under the direction of Dr. Sophia Perdikaris, then at the Graduate Center and Brooklyn College. I joined the international archeological collaboration which included Brooklyn College students, Archeologist Sandrine Grouard of Muséum National d'Histoire Naturelle of Paris conducting an ongoing Pre-Colombian excavation, and also Dr. Allison Bain’s, Université Laval, Canadian team’s archeological work on the Highlands British colonial site. The community approved research center facilitated my study.

As I learned about the island, its history and its people, what at first glance struck me as odd—the complete disrepair of the Highlands sight, made sense on multiple levels. First, the economic resources on the island were minimal, and understandably, were focused on local schools, services and day to day living. It also became evident that the traditions and culture most valued by the island’s current residents, overwhelmingly those of African descent from those people originally brought as slaves under colonial rule, were those that celebrated their freedom from British rule and which celebrated the land—its communal legal structure, its surrounding ocean, its plants, trees and sky. Deep and lingering negative associations linking agriculture and slavery may, however, be holding islanders back from maximizing their land’s potential to grow crops, found several researchers (Boger et al., 2014). During my August 2017
field visit, I was struck by the difficulty of obtaining locally-grown fruits that I had hoped to provide as snacks during the arts camps, though the economy is subsistence, not market oriented.

Figure 1. Caves. Source: Martha Lerski

Figure 2. Codrington Estate Ruins, The Highlands. Source: Martha Lerski
Apart from its archeological history and traces of Indigenous Peoples (Perdikaris et al., 2013; Potter, Chenoweth & Day, 2017) who once lived or passed through there, the eastern Caribbean island that is now Barbuda was in 1685 leased to the Codrington family by the Britain under Charles II (Frank, 2017, p. 5). Because the island’s landscape was drought-prone—with thin soil that was not suitable for large plantations but rather supported the provision of meat, leather and wood for the island of Antigua—its “slaves were not subject to the tyranny of the plantation system and did not experience the day to day hardship that slaves on some other major plantation islands in the Caribbean endured.” Thus, the “lifestyle on Barbuda allowed the slaves almost to retain the freedom that they had had in Africa and essentially did not completely destroy all their cultural traditions and routines” (Frank, 2017, p. 6). In 1834, Britain emancipated slaves in its colonies and on August 1 of that year, Barbudan slaves were granted independence (p. 9).

My second visit to the island took place in August 2017. Because a Category 5 Level Hurricane hit Barbuda in September of that year (The New York Times, 2017), and given the resulting—unfortunate—next step to follow up with a community already being researched re immediate impacts to perceptions of valued cultural elements, I made a return field visit to the community after most of the inhabitants had returned to the island from relocation to a sister island (Price, 2017; Boger & Perdikaris, 2019). This follow up study enabled me to consider an emerging situation regarding how communities adapt to relocation and also adaptation upon return. As I noted in my presentation at the The Climate Crisis: A Global Dilemma event at the University of Connecticut in November of 2018, the Barbuda case gives some warning of issues that may face other climate refugees. Here, I will draw upon readings and my field research to
explore potential proactive methods of documenting and preserving communities’ cultural traditions.

Let me begin by affirming that—despite official climate change denial in the country where my university is domiciled—I will accept as accurate multiple studies, including those listed below that document the existence of climate change and its risks: “Assessing ‘Dangerous Climate Change’: Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature” (Hansen, et al., 2013); National security and human health implications of climate change (Fernando, Klaic, & McCulley, 2012); “A Comparison of Two Global Datasets of Extreme Sea Levels and Resulting Flood Exposure: Comparison of Global Extreme Sea Levels” (Muis et al., 2017); “Increased Threat of Tropical Cyclones and Coastal Flooding to New York City During the Anthropogenic Era,” Reed et al., 2015; Retreat from a rising sea: Hard choices in an age of climate change, (Pilkey, & Pilkey-Jarvis, & Pilkey, 2016); and Why are we waiting?: The logic, urgency, and promise of tackling climate change (Stern, 2015).

I make reference to an underlying understanding of the science of Climate Change whether or not legal experts have been able to construct a refugee or victim-protecting definition or category for what constitutes migration-inducing or broader “environmental triggers” that cause individuals or entire communities to resettle either temporarily or permanently (McAdam, 2011; Biermann, & Boas, I.; 2010; Nansen Initiative on Disaster-Induced Cross-Border Displacement, 2016).

I call upon research and instruction in courses during my Graduate Center Individualized Studies track, “Cultural Heritage Preservation in the Context of Climate Change Adaptation or Relocation.” While my research focus is on the preservation of cultural heritage, because the topic is specifically “in the context of climate change adaptation or relocation,” multiple
disciplines contribute to an understanding of interrelated elements. These disciplines include Law, Anthropology, Psychology, Art, Art History, Archeology, Economics, Sociology, Political Science, Philosophy and Environmental Sciences. Of particular relevance are studies that explain how local environmental or indigenous knowledge relate to cultural heritage or to a symbiotic relationship between the health of the two.

Cultural preservation is related to the health of physical and biological environments (Pretty et al, 2009; Advancing Communities, 2017). While ancient or Indigenous Peoples have also depleted their environments (Harrison & Maher, 2014; Kirsch, P. V., 2005), scientists and policy-makers currently “acknowledge the role that local practices can play in biodiversity conservation,” whereas “state-imposed” approaches have failed or lacked integrity (Pretty et al., p. 103).

Healthy ecosystems support human mental health, not simply the environment or physical well-being, and are in turn protected by Indigenous respect for cultural heritage (MacDonald, Willox, Ford, Shiwak & Wood, 2015). Reflecting on Indigenous awareness about specific medicinal and nutritional knowledge in South Africa, one expert Langton (1998) noted that representatives from Western industries, governments and science “overlook the fact that many of these complex and biodiversity-rich resources have long been cared for and managed by indigenous peoples, who point out that these are not ‘natural resources’ but cultural landscapes” (Ngulube, 2017).

On the island of Barbuda, an increasing number of residents are diabetic, whereas the population used to rely on local foods gathered and hunted before the importation of processed foods (Daily Observer, 2018; Boger et al., 2014; Potter, Chenoweth & Day, 2017). Soda
appeared as a food category element mentioned by children in the 2018 “Valued Cultural Elements” questionnaire.

Disassociation from the land is reflected in impacts to the critical aquifer, and the land erosion signaling current vulnerability to rising seas. Some mangroves have been cleared to make way for tourist development (Potter, p. 8). The island has been selling sand rights, something that has faced legal opposition (Barbudaful, sand mining; Potter, p. 8) yet the continuing formal agreement, even after Hurricane Irma, is puzzling as the mining is consistent and large scale, as opposed to the kind of sand theft by individuals that has been reported in Barbuda as well as other Caribbean islands (Associated Press, 2008). This issue of the selling of a critical commodity—that effects aquifer as well as the beaches that are not only part of the island’s tourist attraction but protect the island’s fresh water aquifer as well as against land erosion—raises a red flag about tradeoffs that will increasingly face climate-change vulnerable states. Here, official government contracts, controlled by a sister but different government body, take precedence over current visible loss and future environmental protection to the local community whose resources are being exploited to benefit outside entities or investors whose priorities are not those of the local community (Frank, pp. 17-24, 2017; Klein & Brown, 2018).

Diminishing water aquifer in Barbuda highlights a growing concern worldwide; for instance, countries such as Saudi Arabia and China are facing irrigation stresses for their agriculture and are relying on importation of key foods due to diminished water supplies in deep aquifers (Nesbit, 2018).

**The Primacy of Property Traditions as a Cultural Element**

One key finding of my research is that in Barbuda cultural perceptions and traditions relating to the land are among the most deeply-held heritage values. The community’s current
and historical relationship to, and legal rights regarding, communal ownership of land are primary cultural heritage elements. As I had visited the island once before I commenced formal research, I was attuned to that element; however, I am aware how easily a parachuting/one-visit research trip could easily miss aspects of key cultural elements. Even for those whose culture is at hand, the significance of a unique element might not be particularly protected or documented—just as with any culture or individual who takes what is pervasive for granted.

While visiting the island in November 2018, I met the Frank family who have been active in Barbuda Land rights, and I call upon the book, *Dreamland Barbuda: A study of the history and development of communal land ownership on the island* (2017), by Asha Frank, currently a member of the Barbuda Council. *Dreamland Barbuda* includes interviews with local figures and also pulls on research she conducted in England and in Antigua—gathering from historical and legal documents that are scattered across the British Commonwealth.
Literature Review

Several papers explore the link between agricultural practices and cultural traditions. This is significant to my study not only because the environment and Cultural Heritage are each influenced by the other, but because one must consider that this interrelationship is already being tested in places that are not making headlines regarding hurricane or flood-related evacuations. For instance, recurring droughts are predicted to result in “more widespread desertification, a loss in soil nutrients and fertility that diminishes agricultural production” (Piguet, Pecoud & Guchteneire, 2011, p. 331). Studies focusing on “Cultural Impacts to Tribes from Climate Change Influences on Forests,” (Voggesser et al., 2012) or Porgoren traditional practices in Papau New Guinea related to a community’s nuanced understandings of shifts in the environment (Jacka, 2016), indicate the value of protecting knowledge systems. Stakeholder and local knowledge can benefit communities, enabling shared knowledge and the possibility of responding to subtle signs of change.

A 2015 article by Kuruppu and Willie in Weather and Climate Extremes illuminates social, political and economic factors unique to less developed, small island states, and argues for deliberate and sustained inclusion of stakeholder input, something which my field studies and questionnaires aimed to do.

Bangladeshi coastal communities (Ataur Rahman & Rahman, 2015) face challenges from the introduction of high-yielding rice methods introduced by the International Rice Research Institute, abandonment or loss of knowledge about traditional methods, and diminished intergenerational knowledge sharing. Native American peoples have long addressed environmental threats such as droughts, crop diminution, or invasive species: “tribal cultures have adapted subsistence strategies and socio-economic systems in response to climate and fire
regimes for millennia” (Voggesser, p. 617). However, modern national and other political boundaries often prevent adaptation or exacerbate political tensions (Maldonado, Shearer, Bronen, Peterson & Lazrus, 2013). For instance, Native American tribes are confined to reservations within defined geographic parameters, with many of those boundaries being forced relocations to less desirable land (Southwestern Tribal Climate Change Summit, 2017). Low-lying island peoples share similar mobility restrictions, with limited options for adaptation due to both political and tight geographic boundaries (Maldonado et al., p. 603).

Though studies by Davis, Hooghe, Marks, & Stephens (2011); Havekes et al. (2015) and Whiting-Pierce (2017) suggest that local or regional approaches may be most effective, national boundaries present looming obstacles or legal justifications to protect citizens’ access to scarce resources. For example, with the melting of ice from the Himalayas, diminished river flows may be diverted to those countries who are further upstream, leaving some countries without access to drinking and agricultural water (Nesbit, 2018; Fernando et al., 2012; Carrington, 2016), and potentially triggering political and military conflict and migration.

Populations have adapted to or relocated in relation to environmental change over archeological time (Hastrup & Fogg, 2012; Kirsch, 2005) but the human population continues to increase, with the number of people on earth having grown by more than 400% during the 20th Century and the current world population is 1,860 times larger than 12,000 years ago (Roser, World in Data). While we have planes, boats and trains to transport people, food and water insecurities and national boundaries make migrations highly complex.

In Barbuda, economic vulnerability in the advent of a climate disaster played out with little opportunity for residents to protect their established legal rights:

for investors with big dreams, the Barbuda Land Act was also highly
inconvenient. It placed limits on the length of their leases, the footprint of
their properties, and the infrastructure that could service them. It also required
a great deal of democratic engagement with the island’s residents, as opposed
to the usual top-down deals. (Klein & Brown, 2018)

**Migration, Inequalities & Vulnerabilities**

One might think that internal displacements in reaction to climate change would be
culturally or psychologically easier on migrants than relocations outside of national borders. As
my case study and post-Hurricane news of Barbuda indicate, this is not necessarily so. (Boger &
Perdikaris, 2019; Carrington, 2016; Scruggs, 2017; Internal Displacement Monitoring Centre,
2019). Recognizing nuanced differences in cultural practices even within political boundaries,
will be important, as “there is a general consensus that the majority of people likely to be
displaced by the effects of climate change in the next century will be displaced inside their own
countries, rather than across international borders” (Piguet et al., p. 289; Carmain et al., 2015, p.
183). Also, internal and international migration are generally associated (Asian Development

The question of definitions relating to migration, migrants, evacuees or climate change
itself is not an abstract consideration. Definitions regarding “climate,” or environmentally-
triggered migrations—“refugee” or “migrant evacuation,” “preemptive relocation” or
“resettlement,” determine levels of support or individuals’ ability to enter countries (Ferris, p.9).

Political systems are another reflection of culture and of political voice—or lack thereof.
Political agency is one of the assets which individuals and groups have which shape migration
capabilities along with hard or soft resources. “Whether migration is an expression of
vulnerability or capability depends to a large extent on the degree of freedom or choice for exit or voice or a combination of the two (Faist & Schade, p. 12). In addition to underlying political institutions and frameworks for communication or redress, economic systems such as state-imposed solutions or market-driven approaches influence whether cultural traditions will be considered or consulted when devising proactive strategies, adaptive responses, remediative actions or deciding upon policies related to forced evacuation or integration of internal or external refugees.

Studies on equitable impacts of economic policies that proactively address carbon emissions must consider inequalities within regions or nations. (Arora, 2014; Clarke-Sather, Qu, Wang, Zeng, & Li, 2011; Davies, Xiaojun, & Whalley, 2014; Piketty & Qian, 2009). For instance, in India the regions rich in natural resources but low in human development/birth mortality are the highest emitters of greenhouse gasses within the nation, which contrasts with the macro perspective that countries with lower GDPs generally contribute less carbon to the planet (Davis, & Caldeira, 2010; Pretty, 2013). As the Barbuda case illuminates, politically-affiliated communities can have unequal economic profiles.

The disproportionate impact of climate change, or of carbon-reducing preventative polices, on poor regions or subnational districts such as provinces or states, or even within different economic classes within one region can create volatile political environments. Recent “yellow vest” political developments in France (Nossiter, Rubin, & Breeden, 2018) the country which hosted the Paris Climate Accord, illustrate that proportional burden sharing should be considered in implementing proactive planning as well as in post-disaster relief efforts. The general question of economic inequality inside nations and between nations is explored by such writers as Branko Milanovic (2011, 2016), and Thomas Piketty (2009, 2014) and has tremendous
impact on the likely success of stakeholder buy-in regarding proactive economic, scientific, political, medical or cultural interventions to prevent or mitigate both the anticipated and already-evident impacts of Climate Change.

A question that comes to mind with regard to distribution of costs for lowering carbon emissions in China, where there may be a need for technology transfers to support clean technologies for less developed western provinces, raises a global issue: Should carbon taxes, or deterrents such as caps on coal use (Zhang, Karplus, Qi, Zhang & He, 2016) for wealthier places be employed to support development of clean technologies across territories or states—more broadly—in countries or internationally?

This awareness of regional differences, and the need to consider micro management as well as national or regional-level policies, is also relevant to government approaches to preserving cultural assets; cultural artifacts or traditions of remote areas may nevertheless be significant environmentally, culturally or economically to the nation as a whole. In a broader sense, the underlying likelihood of large numbers of migrants moving due to climate change is a fundamental reason to plan ahead for how peoples will both preserve and be able to call upon their cultural heritage in new surroundings.

In movements such as “circular migration” that may not be as visible as post-disaster dislocations, many individuals leave home in response to environmental conditions—a mode of coping whereby migrants send remittances to home countries or gain skills and assets at host locations. These are early “means to avoid uncontrolled migration and flight due to adverse living conditions in a warming world. Here migration evolves into a coping strategy to handle those resource base problems” (Faist, p. 9; Guardian, 2016).
As drought and desertification increase across the globe, “there is now a growing understanding that those in rural communities struggling with persistent drought and desertification may engage in migration as a coping strategy,” write Piguet, Pecou and Guchteneire in *Migration and Climate Change* (2011; Environmental Migration Portal, 2019).

Because Barbudans’ relocation to nearby Antigua provided a context of geographic proximity for relocation, the situation provides a window on coping strategies in inter-border climate migrations. Some of the August 2017 camp participants had not returned from Antigua by November of 2018.

Temporary migration may be one coping strategy, either inter or extra borders, as a response to natural disasters as well as to slow onset climate changes. “No Matter of Choice: Displacement in a Changing Climate,” illustrates impacts of slow onset events in small island developing states (SIDS), noting multiple causes such as sea-level rise, sea surface temperature,
ocean acidification and ocean oxygen depletion that have impacts on fish stocks, groundwater, agriculture, tourism and displacement outcomes (IDMC, 2018). Barbudans were forcibly evacuated from their island after the devastation of a Category 5 hurricane, Irma, was immediately followed by the threat of another hurricane, Jose, in September 2017. By late 2018, Barbudans were returning to their home island as schools returned and houses were being rebuilt (Boger & Perdikaris, 2019).

With increasing coastal erosion and the possibility of more frequent high-intensity hurricanes, communities such as Barbuda must prepare for the possibility of further dislocations. Increasing sea temperatures are correlated with increased intensity and destruction of hurricanes, cyclones and flooding (Biermann & Boas, 2010, p. 68)

Nicholas Stern, Chair of the Grantham Research Institute on Climate Change and the Environment, has long warned of the permanent displacement of hundreds of millions of people by the middle of this century due to flooding, drought and rising sea levels (2006), but given slow progress towards reducing carbon emissions, his warnings are increasingly dire. “On the basis of current plans or trajectories of different countries, we could be heading to a median increase of 4°C, a temperature not seen on the planet for tens of millions of years. Its consequences could be catastrophic” (2015, p. xiii).

In addition to climate-driven political, national security and economic consequences for millions, medical risks are increasing—from illnesses related to more mosquito borne diseases, to famine, to disaster pollution and lack of sanitation. Writing in 2014, the Journal of the American Medical Association’s editors, Howard Bauchner and Phil Fontanarosa warned that “it is critical to recognize that climate change poses the same threat to health as the lack of sanitation, clean water, and pollution did in the early 20th century.” With the addition of
migration and cross border logistics and regulations, managing communicable or disaster-related diseases will pose severe challenges.

An understanding of mental health implications should be anticipated as well, and it is my argument that preparing climate-vulnerable peoples for displacement via proactive identification and protection of key cultural elements, is a worthwhile endeavor that supports social well-being of individuals and communities. David Lempert’s proposed categories to assess cultural well-being provide specific attributes to identify key elements of potential vulnerability (2010b).

With migration, impacts are felt both in the home countries of those who migrate as well as in the host countries to which people immigrate. Reese, Rosenmann and McGarty, writing in the European Journal of Social Psychology, note that nuanced understandings enable both hosts and displaced persons to engage. “In a world that forces and entices individuals to leave their countries of origin, it is increasingly important to understand how attachment to specific locales affects well-being, and ultimately, behavior towards new host countries” (2015). This calls for holistic planning perspectives and emphases beyond international development projects’ promotion of “disembodied productivity” (Lempert, 2010b, p. 520) – towards a model embracing both “security/wealth and sustainability/human diversity. “What if the stable human cultural diversity were recognized as the real key to sustainability and growth, and not vice versa?” asks Lawyer, Development Consultant and Anthropologist, Lempert (pp. 517-18).

Less developed nations are those countries anticipated to most severely experience climate change. Those identified as having high climate exposure but low resilience include, Eritrea, Burundi, Niger, Ethiopia, Rwanda, Chad, Burkina Fasso, Haiti, Malawi, Sudan, Senegal, Bangladesh, Mauritania and India (Fernando et al., 2012, p. 8). Disadvantaged peoples are less
able to adapt; weak civil societies, inequalities, and restricted access to such resources as law or justice make climate change make dislocations even more complex (Faist & Schade, 2013, p. 11). “Slow onset” migration, not easily attributable to climate changes because no one disaster marks migrations, also occurs with communities such as Barbuda with inadequate fresh water or which suffer from temperature fluctuations that inhibit agricultural production. Poorer communities have less adaptive resilience (Piguet et al., 2011, pp. 131, 99).

Figures 4 and 5 below indicate that, with the exception of the Asia Pacific region, the regions with the lowest levels of carbon emissions correspond to the “high climate exposure but low resilience” categories identified by Fernando et al.. In addition to the scientific, infrastructure, and economic preparations that communities and countries should be preparing, it is incumbent on the world community to assist climate vulnerable communities to document, preserve and sustain their most valued cultural elements as peoples migrate to relocate or adapt to climate changes. Still, local stakeholders know their cultures and their environments best. An example of effective planning for adaptation to climate change is undertaken by many Native American tribes in the United States. For instance, retrieved from an adaptation planning toolkit dashboard, looking at one Alaskan tribe’s adaptation plan, with its specific references to keystone plants and cultural traditions, one has a sense of the opportunities for place-specific community proactive and remedial actions (Northern Arizona University, 2019; Metlakatla Indian Community, 2017).
Figure 4. World Carbon Emissions by Region. Source: BP, *In Statista - The Statistics Portal*

Figure 5. Regional GDP, 2017. Source: IMF, *In Statista - The Statistics Portal*
My research has drawn upon and been in response to many studies, including: *Advancing Communities Tribal Summit*; “Natural and Traditional Defense Mechanisms to Reduce Climate Risks in Coastal Zones of Bangladesh (Ataur Rahman & Rahman, 2015); “Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees” (Biermann, F. & Boas, L., 2010); “Carbon Inequality at the Subnational Scale: A Case Study of Provincial-level Inequality in CO₂ Emissions in China” (Clarke-Sather et al., 2011); Inequality, Climate Impacts on the Future Poor, and Carbon Prices (Dennig, Budolfson, Fleurbaey, Siebert, & Socolow (2015); *Dreamland Barbuda: A Study of the History and Development of Communal Land Ownership on the Island* (Frank, 2017); *The Sixth Extinction: An Unnatural History* (Kolbert, 2014);” A Call to Anthropologists to Develop a Red Book for Endangered Cultures” (Lempert, 2010a); “Protective Factors for Mental Health and Well-Being in a Changing Climate: Perspectives From Inuit Youth in Nunatsiavut, Labrador” (MacDonald, Willox, Ford, Shiwak, & Wood, 2015); “Environmental Heritage and the Ruins of the Future” (Matthes, 2017); “Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change” (Nansen Initiative on Disaster-Induced Cross-Border Displacement, 2016); *Retreat From a Rising Sea: Hard Choices in an Age of Climate Change* (Pilkey, Pilkey-Jarvis & Pilkey, 2016); “Rhizome ArtBase: Appendix D: Artist Questionnaire” (2002); and “Adaptive Governance: Tools for Ecotopian and Democratic Politics” (Whiting-Pierce, 2017).

**Biocultural Diversity and Documentation Methodologies**

The following studies and conferences address or illustrate an increasing recognition that cultural and biological diversity and well-being are linked: *Southwestern Tribal Climate Change Summit* (2017); “Natural and Traditional Defense Mechanisms to Reduce Climate Risks in Coastal Zones of Bangladesh” (Ataur Rahman & Rahman, 2015); “Correlating Local Knowledge
with Climatic Data: Porgeran Experiences of Climate Change in Papua New Guinea” (Jacka, 2016); “Why We Need a Cultural Red Book for Endangered Cultures, NOW: How Social Scientists and Lawyer/Rights Activists Need to Join Forces” (2010); “Local Knowledge and Memory in Biodiversity Conservation (Nazarea, 2006); “The Intersections of Biological Diversity and Cultural Diversity: Towards Integration” (Pretty et al., 2009); “Visibility and Accessibility of Indigenous Knowledge on Open Access Institutional Repositories at Universities in Africa” (Tapfuma & Hoskins, 2016); and “Cultural Impacts to Tribes From Climate Change Influences on Forests” (Voggessee, Lynn, Daigle, Lake & Ranco (2013).

The United Nations Educational, Scientific and Cultural Organization (UNESCO) is producing a working paper, “Indigenous Languages as Tools for Understanding and Preserving Biodiversity,” noting a “fundamental linkage between language and traditional knowledge (TK) related to biodiversity,” as “Local and indigenous communities have elaborated complex classification systems for the natural world, and that “environmental knowledge is embedded in indigenous names, oral traditions and taxonomies, and can be lost when a community shifts to another language “ (UNESCO, Culture). In addition, The United Nations General Assembly proclaimed 2019 as the International Year of indigenous Languages.

A 2018 Finnish study recommends on site storytelling events by which biocultural efforts could also include conservation initiatives (Fernandez-Llamazares & Cabeza, 2018). However, the authors caution against colonial methods, infringement of intellectual property, misinterpretation and mistranslation, and insensitivity to privacy regarding secrets. These concerns mirror those raised by the Climate and Traditional Knowledges Workgroup (2014). Further, Philosopher Erich Hatala Matthes, writing in “Cultural Appropriation without Cultural Essentialism?” cautions against lumping people in to one cultural marker or group, such as race,
as individuals may represent a range of categories such as religions, gender identity, and are not homogenous (2016, p. 356).

**Language**

Though the Caribbean has only one language on the UNESCO list of endangered languages, and that language is already extinct, that database may still be useful for other studies aiming to proactively identify language-vulnerable cultures. Languages are a recognized proxy for cultural health (Lempert, 2010b, p. 535) and reflect place-based nuances and adaptive perspectives on seasons and geography (Rose, 2005); endangered languages may flag their speakers’ vulnerability in the face of climate changes. It is important to approach data with caution, however—not taking what is presented as indicating that face value represents total value with regard to potential omissions; for instance, though only one “extinct” language is noted for the Caribbean region in the UNESCO Endangered Languages database, a study, “The Cultural Mosaic of the Indigenous Caribbean,” indicates that there were a multitude of “mutually unintelligible“ languages (Wilson, 1993, p. 59) beyond an Arawak and Carib-only “oversimplification” at the time European conquest (Wilson, S., 1993).

To illustrate this Endangered Language resource, below is a screenshot from the UNESCO database relating to the Caribbean region, where the cultures of native peoples have largely disappeared. The map of the rising-seas-endangered Pacific Island Solomon Islands serve here as a proxy for a location with both extreme language and climate vulnerability. The metadata fields of the database are useful tools for those documenting cultural heritage. For instance, the fields use standard notations for how to report latitude and longitude coordinates, include an International Standard for Organization language code, and names identified
languages as expressed, and possibly searched for, in different languages other than the primary language used by the database. UNESCO’s coordinates and identified endangerment categories enabled me to create a visual of one proxy for cultural endangerment in a specific, small island developing state (SID), region.


My Valued Cultural Elements Survey is an early iteration of a questionnaire that will methodically record stakeholders’ identified cultural elements, while allowing enough flexibility for varied expressions across different communities. Some of the inspiration for this came from the now-dormant Rhizome Artrbase implemented as an artists’ questionnaire that enabled digital artists to designate what they wished to preserve, and how (2002). The UNESCO Convention for the Safeguarding of the Intangible Heritage (2003) and the MAD (Museum of Arts & Design) Collection Management Policy (2008) alerted me to the importance of providing categories for documenting, and for prompts to participants to make note of their ephemeral heritage.

“Research Priorities for Conservation and Natural Resource Management in Oceania’s Small- island Developing States,” (2018) examines which questions are most important to SIDSn in that region, in order to establish which collected elements of biodiversity information will be useful for stakeholders. This approach may be useful also for future cultural documentation research. The authors, Weeks and Adams note that “Answering these questions will require both ecological and social- science research, most of which would be best undertaken in close collaboration with practitioners in the region.” For instance, question 34 asked, “How can we combine the best modern science with the best indigenous and local knowledge as a basis for biodiversity conservation and sustainable use in Oceania?” This perspective indicates that cultural knowledge has the potential to assist with environmental and biodiversity sustainability.

Open access repositories are a developing digital structure for storage and search. Along with concerns expressed in Tapfuma & Hoskin’s (2016) study, an organization such as the Environmental Data & Governance Initiative was created specifically to address protection of environmental elements (EDGI, 2019). Cultural memory and local knowledge “serve as
repositories of alternative choices that keep cultural and biological diversity flourishing” (Nazarea, 2006, 318). I will conclude by suggesting methodologies how to scale this study by, for instance, incorporating coding standards and controlled vocabularies.
Barbuda

Barbuda’s situation illustrates a case of a small island developing state; while its sister island and part of the joint nation state, Antigua, (Potter, p. 8) is more developed economically, Barbudans’ political voices were ignored when the island was vulnerable during and after the crisis of a major hurricane (Boger & Perdikaris, 2019; Frank, 2017; Klein & Brown, 2018; The Conversation, 2018; Faiola, Schmidt & Fisher, 2017). “We suffered one disaster with Hurricane Irma but that was followed by a worse disaster – disaster capitalism,” said John Mussington, a school principal and marine biologist, one of two Barbudans who brought an interim injunction against the governments of Antigua and Barbuda to suspend work on the airport, that was undertaken immediately after Hurricane Irma, when residents had been forcibly evacuated. “Until now we have been able to sustain our livelihoods on the island without jeopardising the future of our children and grandchildren. But now wealthy individuals are putting that world in danger” (Taylor, 2018; Boger & Perdikaris, 2019).

A proposed amendment to the Barbuda Land Act “was done deliberately and while Barbudans were traumatized, while they were kept away from their homes, while they were scattered, suffering post-traumatic stress” concluded Mussington (Klein & Brown, 2018). Within days of the disaster, the Prime Minister of the dual-island state was proposing that Barbudans change their centuries old communal land system for a freehold title system (Scruggs, 2017, December 6). In December of 2017, an amendment to the Barbuda Land Act was presented in Antigua and Barbuda’s House of Representatives. According to Klein and Brown, it “includes changes that entirely reverse the meaning of the law,” noting that a clause that had declared Barbuda “owned in common by the people of Barbuda” was deleted and
replaced,” with the following: “The fundamental purpose of the Act is to grant to Barbudans the right to purchase the [land]” (Klein & Brown, 2018).

As a distinctly-governed island with shallow soil that determined agricultural methods such that slaves were managed differently than those on Antigua, the island thus has a longstanding cultural heritage regarding land ownership (Frank; Boger et al, 2014; Boger & Perdikaris, 2019). It continues to integrate traditions from Africa, whereby residents still practice some land traditions continued by descendants of slaves. (Frank, 2017; Perdikaris, 2013) Mackenzie Frank, commenting on the 1979 discussions regarding the independence of Antigua and Barbuda, notes that “the two islands would have had to have a constitution that reflected their own cultural, political and economic interests,” such as Antigua’s freehold system and Barbuda’s communal land tradition (p. 50).

Barbudan slaves may have been permitted more freedom than those enslaved on other Caribbean islands, but they still rejected subjugation, and researchers Perdikaris et al. in, “The Caves of Barbuda’s Eastern Coast: Long Term Occupation, Ethnohistory and Ritual,” (2013) discovered evidence of what appears to be Obeah; the creole folk ritual activity “has elements of medicinal use as well as poisoning and magic” (p. 6). Because such practices were banned, and “Its leaders were thought to have a corrupting influence on other enslaved people,” the traditions were practiced in secret, such as in the historic cave rituals documented by the study. Reticence to share knowledge about the tradition was evident in my studies, which speaks to an issue raised elsewhere in this thesis, the right for people not to share information. As Perdikaris notes, the necessity for secrecy regarding some cave-based traditions extends back to colonial times. In 2017, it was distressing to hear reports from Barbuda that those individuals who had hidden in
caves were smoked out by Antiguan authorities pushing to remove all Barbudans from the island.

Contemporary Barbudans still participate in “living from the land” practices during certain times of the year. This involves certain communal meals as well as individual retreats, or families camping, as noted in participant responses to my questionnaires. One feature of the continuing tradition is that “During the living from the land outings, all the protein cooked is either hunted or collected” The tradition provides opportunities for “entire families using time in the caves to connect with each other and friends…and exchanging stories” (p. 2).

Perdikaris is a long-time fixture of the island, working together with the community on archeological, scientific and educational efforts—so her access to local knowledge is not the typical portal through which a researcher first learns about a location. In January of 2017, I joined her tour of a cave. Learning about the island under the guidance of an already-trusted and knowledgeable academic expert on the locale immediately familiarized me with cultural traditions and enabled me to jump right in during short field studies. The case study that follows is based on that foundation and the warm welcome and assistance of members of the Barbudan community.
Case Study of Community-Valued Cultural Elements: Climate-Vulnerable Barbuda Before and After Hurricane Irma

My 2018 research trip was a follow up visit after the September 2017 Category 5 hurricane, Irma, devastated the island of Barbuda and forced relocation of inhabitants to its sister island. In 2018, I introduced a template, “Valued Cultural Elements,” for climate-vulnerable cultures to anticipate dangers to cultural heritage and to identify key valued elements that they would wish to preserve. My research preceding Hurricane Irma also involved community engagement via an arts camp focusing on visually expressing, or visual arts-generated discussions of valued cultural elements. Members of the Barbudan community, both children and adults, communicated via drawing, painting, sculpture, discussion and writing. The participant cohort, an estimated 40, an actual 30, was an appropriate size for one researcher.

As I intend to continue this work in other communities after my studies—and hope that others will find my framework useful for similar work—this thesis will aim to provide a theoretical as well as practical foundation for utilizing a) a Valued Cultural Elements survey, and b) place-specific visual arts outreach and involvement as a way of engaging climate-change vulnerable peoples in the identification, preservation and sustainable stewardship of their cultures in the event of adaptation or relocation. Underlying this approach is a fundamental belief that artistic expression, and its manifestation and preservation, is a vital force in sustaining human well-being.

A primary understanding, that grew stronger through my research, was that “culture” and thus “cultural heritage” involves and includes far more than contemporary definitions of the visual arts such as painting, sculpture and ceramics (Wilson, 1993, p. 40) as what “anthropologists long ago defined as the unique mix of beliefs, practices, values, and institutions
shared by members of society,” (Brown, M. F., 2003, p. 4) and must conscientiously encompass the performing arts, traditions such as fishing and hunting, and “intangible heritage” as defined by UNESCO’s *Convention for the Safeguarding of the Intangible Cultural Heritage* (2003). This expanded definition also applied to my study of Barbuda and its traditions of Carnival, hunting and cave celebrations emphasizing culinary arts.

**Field Study I, August 2017**

<table>
<thead>
<tr>
<th>What are your favorite forms of art on the island? Examples of art can include drawing, cooking, dancing, singing, pottery making, or other arts:</th>
<th>How did you learn about this form or forms?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooking x4, Cooking soldier fungi, fryfish, lobster thermidor</td>
<td>I learn about this art form from my abuela, home, learn from others, going to class</td>
</tr>
<tr>
<td>Historical sites (the caves and Martello Tower)</td>
<td>At a museum</td>
</tr>
<tr>
<td>Drawing x6</td>
<td>Older siblings, school, family members and art classes, self, school</td>
</tr>
<tr>
<td>Singing x2</td>
<td>Step sister, “it comes naturally”, school, home, listening to others or the lyrics</td>
</tr>
<tr>
<td>Baking</td>
<td>From home</td>
</tr>
<tr>
<td>Music: Playing bass at home, steel pan, drumming</td>
<td>In school</td>
</tr>
<tr>
<td>Dancing</td>
<td>School, home</td>
</tr>
<tr>
<td>Painting x2</td>
<td>“from living a great life by going and doing at home,” father, grandmother</td>
</tr>
<tr>
<td>Sculptures</td>
<td>History books</td>
</tr>
<tr>
<td>Making pottery</td>
<td>Television</td>
</tr>
</tbody>
</table>

In Table 1, the children participating in the 2017 arts camp responded to the question: What are your favorite forms of art on the island? Responses here indicated arts and traditions ranging from constructed and natural historical sites such as Martello Tower and the caves, to steel pan playing or singing, to the culinary traditions involving seafood such as lobster and soldier crab fungi. The latter food is a key part of the “living from the land” cave traditions, this one when hermit crabs migrate to the ocean to lay their eggs (Perdikaris, Personal Communication, March 14, 2019). Responses to the follow up question reflected family, home-based to broader, school, museum or television-based learning regarding the question: How did
you learn about this form or forms? The artistic responses to valued cultural elements emphasized nature, such as these local trees, seen in Figures 8 and 9.

Figure 8. Ginepe Tree. Source: Martha Lerski

Figure 9. Palm Tree. Source: Martha Lerski
Opening questionnaire, field study I. Adults’ responses to the question, “How can you teach others about the arts and traditions of your island, Barbuda? emphasized intergenerational transfer via the teaching of the young by the old, cultural classes, writing books, storytelling, having cultural fairs, and instruction through plays and drama. Additional questions and responses from Table 2 follow:

- What systems can be put in place to teach residents and others about the arts of Barbuda? Which art forms?
- What systems can be put in place to teach residents and others about the arts of Barbuda? Which art forms?
- What methods do you know of or would you suggest to keep records of Barbudan arts such as songs, dances, recipes, or festivals? Please feel free to mention other types of art forms that you think are worth preserving.

Adult participants named cooking, recipes, coal pots, yabba pots, music, dance, straw brooms, conch shells for blowing, calabash, cultural artefacts, and ornaments and jewelry from local materials as part of their cultural heritage. Suggested methods to document, teach about or preserve art forms included: writing books, integrating teaching about heritage in school curricula, youth forums, museums, communication on social media, workshops on steel pan tuning, and oral history interviewing including recordings and videos.

**Drawings and paintings, children. Field study I.** The significance of the land, and nature was clear from the number of times that elements such as vegetation, ocean, birds and ocean were mentioned in Table 3. While I would caution about drawing strict conclusions from the numbers in the table, given that fruits were a subject of one of the warm up drawing
exercises, it does strike this New York City-based researcher that children in Barbuda drew what they have in their culture, which did not include pervasive American urban elements such as cars or movies. Here, trees topped the list of subjects depicted, followed by fruit, sun, ocean, bird (including the island’s Frigate bird), sky, beach/sand, clouds, shells, land animals (including turtles), and sea creatures—followed by grass, love/hearts, persons, flowers/plans, homes, flags, and bees/butterflies/caterpillars, boats, and fish.

In studies to identify valued cultural elements, I would suggest further caution against only documenting widely-reported or recorded elements. Caution could reduce chances of neglecting elements which might hold significance beyond quantitative measure, factors such as healing, hunting or fishing traditions only known to the initiated, fading but still valued religious traditions, endangered languages or dialects, or specialized art forms.

**Sculpture and collaborative elements.** Beyond results from the drawing and painting noted above and in tables 1 and 2, the 2017 arts camp included work with clay, vast quantities of play dough that I made on the island, both plain and colored. During the second arts camp, in 2018, because of scarce resources over one year after Hurricane Irma, I was not able to make clay again because I did not have consistent access to supplies, electricity, or running water. However, when working with clay in August of 2017, the children indirectly revealed one of their key cultural elements—a collaborative capacity through group work, which may possibly be linked to the island’s communal land structure.

After warmup and individual work with clay in 2017, and before engaging in group work for art, I asked whether the children prefer making art as individuals or together: Easier to make together—a unanimous response. Why? They responded that they can be more creative, can work together, and one person can do one thing and another a different part. I soon understood
that this was not isolated to this group of children, that they are part of a collaborative culture.

Among the sculpture that the children made were: a restaurant, making different items together and; a village, one student making a mansion and garden and another team joined in with the farm that they had made.

Among the subjects covered by students’ individual as well as group clay work were: sandmen, coconut trees, a lighthouse, a coffin symbolizing a tradition of having wakes at home, a caterpillar, a clay pot with charcoal; local foods including patties of ground chicken and turkey, bacon, a wide variety of fruits including native pineapple and imported strawberries, bread, noodles, a clam with oyster, eels, sausage roll, hotdogs, pies, and a cake.

The adult cohort also made sculptures out of clay, which included a coal pot, depicted in Figure 14. Ancient coal pots can also be seen in the small museum on the island.
<table>
<thead>
<tr>
<th>How can you teach others about the arts and traditions of your island, Barbuda?</th>
<th>What systems can be put in place to teach residents and others about the arts of Barbuda? Which art forms?</th>
<th>What methods do you know of or would you suggest to keep records of Barbudan arts such as songs, drawings, photographs, dances, recipes, or festivals? Please feel free to mention other types of art forms that you think are worth preserving.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using different ways of teaching/cultural classes x2, Teach in schools, Stories from elderly/old teaching the young x4, older and younger generations making ancient arts—straw brooms x2, yabba pots etc. together, Talking about, Writing about, Living it out x2, workshops, cultural fairs x2, exhibitions, family reunions, Storytelling, Family storytelling, Family passing down traditions such as recipes, Document information, Document Songs, Festivals, Write books, Have plays and drama, Arts and Crafts fairs, Traditional food fairs, Exchanging ideas</td>
<td>Record keeping via writing books x2, Using the internet, Making or preserving histories x2, Make it a part of/integrate into school curriculum x3 (cooking, local language, music, singing and dancing, painting, straw broom) in History and Social Studies, Have youth forums, Museums to preserve cultural artefacts, Writing in a book, poem, song, On social media, Put on school programs and plays, Create educational brochures, Documentation, Making history, Writing books</td>
<td>Clothing, Coal pot making, straw brooms x2, locally made jewelry x2, ornaments from local materials, conch shell for blowing x2, calabash x2, dishes, bags x2, crochet, Oral history/interviews of older persons x 2 (recordings/documentation), Steel pan tuning workshops, cultural festivals, Pamphlets, Preserve traditions of making straw hats and brooms, coal pot, yabba, Hair styling, Making cloth, Books, Computers, Videos x2,</td>
</tr>
</tbody>
</table>
Table 3. 2017 Drawings and Paintings, Children

<table>
<thead>
<tr>
<th>Subjects</th>
<th>x Depicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree</td>
<td>57</td>
</tr>
<tr>
<td>Fruit</td>
<td>49</td>
</tr>
<tr>
<td>Sun</td>
<td>45</td>
</tr>
<tr>
<td>Ocean</td>
<td>36</td>
</tr>
<tr>
<td>Bird/Frigate</td>
<td>29</td>
</tr>
<tr>
<td>Other</td>
<td>22</td>
</tr>
<tr>
<td>Sky</td>
<td>22</td>
</tr>
<tr>
<td>Beach/Sand</td>
<td>21</td>
</tr>
<tr>
<td>Cloud</td>
<td>17</td>
</tr>
<tr>
<td>Shell</td>
<td>16</td>
</tr>
<tr>
<td>Animal/land</td>
<td>13</td>
</tr>
<tr>
<td>Sea creature</td>
<td>13</td>
</tr>
<tr>
<td>Grass</td>
<td>12</td>
</tr>
<tr>
<td>Heart/Love</td>
<td>12</td>
</tr>
<tr>
<td>Person/Abstract</td>
<td>12</td>
</tr>
<tr>
<td>Flowers/Plants</td>
<td>11</td>
</tr>
<tr>
<td>House/Home/Kitchen</td>
<td>8</td>
</tr>
<tr>
<td>Flag</td>
<td>7</td>
</tr>
<tr>
<td>Caterpillar/Butterfly/Bee</td>
<td>6</td>
</tr>
<tr>
<td>Boat</td>
<td>5</td>
</tr>
<tr>
<td>Fish</td>
<td>5</td>
</tr>
<tr>
<td>Family</td>
<td>4</td>
</tr>
<tr>
<td>Land/island</td>
<td>4</td>
</tr>
<tr>
<td>Rain</td>
<td>4</td>
</tr>
<tr>
<td>Turtle</td>
<td>4</td>
</tr>
<tr>
<td>Car</td>
<td>3</td>
</tr>
<tr>
<td>Friend</td>
<td>3</td>
</tr>
<tr>
<td>School</td>
<td>3</td>
</tr>
<tr>
<td>Star</td>
<td>3</td>
</tr>
<tr>
<td>Sport</td>
<td>2</td>
</tr>
<tr>
<td>Drum/steel pan</td>
<td>1</td>
</tr>
<tr>
<td>Food/not fruit</td>
<td>1</td>
</tr>
<tr>
<td>Lightning</td>
<td>1</td>
</tr>
<tr>
<td>Music/instrument/not steel pan</td>
<td>1</td>
</tr>
<tr>
<td>Sand castle</td>
<td>1</td>
</tr>
<tr>
<td>Television</td>
<td>1</td>
</tr>
<tr>
<td>Book</td>
<td>0</td>
</tr>
<tr>
<td>A tradition: storytelling, straw/course broom, palm leaf, harvest, Independence Day, fishing with family</td>
<td>0</td>
</tr>
<tr>
<td>Religious tradition</td>
<td>0</td>
</tr>
</tbody>
</table>
Figure 10. Collaborative Sculpture, 2017. Source: Martha Lerski

Figure 11. Group Work, 2017. Source: Martha Lerski
Figure 12. Spanish Point: Spanish Point has in the past been an area of dispute with Antigua and with developers (Frank, 2017, p. 19). Source: Martha Lerski

Figure 11 illustrates the kind of artistic collaboration that surprised this American researcher during her initial arts camp research. As an American sculptor who works independently but who had for years been a sculpture monitor, both in a class and as well of an open studio at the Arts Student League of New York, I was aware of my own cultural norms regarding the creative process in the visual arts. When, after giving the children in the Arts Camp a choice whether they wished to make sculptures independently or collaboratively, the response was immediate and unanimous: group art.

As my literature review indicates, communal land ownership is a distinct, historically-engrained and dominant feature of Barbudan culture. When I set forth on my research, I envisioned—but was not rigidly attached to—an expectation that the arts camp would reveal, through choice of sculptural, painted or drawn images or text, valued cultural heritage elements such as caves, archeological artifacts, dance traditions, recipes, musical forms and the like. By
including written and oral interviews and observations in my methodology, I was able to note what was evident on site, and to both adjust and expand my definitions of cultural heritage.

One element that is not noted much on the island is the Indigenous heritage before the arrival of the British and the slaves brought from Africa, or of sustainability systems that most likely existed before those recalled and practiced by those of African descent. The question remains, other than shards or archeological human remains of Indigenous Peoples, what happened to them? Archeological records note human settlement dating back to 4000 BC, in addition to evidence of occupation by Saladoid peoples starting around 150 BC (Potter, 2017, p. 8). As noted earlier, UNESCO records one extinct language in the region, but “before European contact…the Caribbean archipelago was probably more ethnically and linguistically diverse than is usually assumed” (Wilson, 1993).

Figure 13. Watercolor Painting of Feet in Sand, 2017, Child Participant. Source: Martha Lerski
This water color image created by a participant in 2017 captures the most striking features from the two arts camps. It depicts the land, here the distinct pink sand of the island, the ocean, human residents’ African-heritage black feet, and the presence of three--rather than two or four—feet, symbolizing group, communal, presence on the island.

Table 4. 2017, Adult Drawings, Field Study I
Paintings & Drawings

<table>
<thead>
<tr>
<th>Subjects</th>
<th>X Depicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit</td>
<td>9</td>
</tr>
<tr>
<td>Sun</td>
<td>4</td>
</tr>
<tr>
<td>Animals/land</td>
<td>2</td>
</tr>
<tr>
<td>Clouds</td>
<td>2</td>
</tr>
<tr>
<td>Fish</td>
<td>2</td>
</tr>
<tr>
<td>Person/abstract</td>
<td>2</td>
</tr>
<tr>
<td>Bird</td>
<td>1</td>
</tr>
<tr>
<td>Boat</td>
<td>1</td>
</tr>
<tr>
<td>Flower/plant</td>
<td>1</td>
</tr>
<tr>
<td>Friend</td>
<td>1</td>
</tr>
<tr>
<td>Grass</td>
<td>1</td>
</tr>
<tr>
<td>Heart/love</td>
<td>1</td>
</tr>
<tr>
<td>Ocean</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
<tr>
<td>Rain</td>
<td>1</td>
</tr>
<tr>
<td>Sky</td>
<td>1</td>
</tr>
<tr>
<td>Tree</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 5. Individual & Group Drawings, Adults, Field Study II

<table>
<thead>
<tr>
<th>Drawing Subjects</th>
<th>X Depicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>A tradition: storytelling, straw/course broom, palm leaf wedding, wake</td>
<td>4</td>
</tr>
<tr>
<td>Animals/land</td>
<td>1</td>
</tr>
<tr>
<td>Food – not fruit</td>
<td>1</td>
</tr>
</tbody>
</table>

Group Work Drawing
How to teach straw broom making
As with the children’s drawings, there is a bias towards fruit as both props and warming up with fruit drawings contributed to the higher number of fruit drawings. Creating a relaxed environment of discovery was developed by first exploring simple and very familiar objects.

In addition to findings through questionnaire’s and artwork created, participants shared their ideas through group discussion as well as individual discussions with me. The former was more common, reflecting the communal culture. Also, while drawing, painting or sculpting conversations took place about Barbudan culture. There was a heated discussion among adults about who decides what is appropriate to pass down. One participant argued forcefully that only the “good” should be preserved. Another later noted that it was difficult to define what is, or who should determine what, is appropriate. Another adult mentioned that perceptions of what is valuable change over time.
Some participants wondered whether digital records lasted long. We talked about multiple ways of maintaining records. We spoke about cloud storage as one backup for photos. I don’t know whether any participants put family photos on the cloud before the hurricane hit a few weeks after our workshops.

A few participants described local knowledge of medicinal plants such as the leaf of sour sop fruit, or bush tea. I was initially struck that, despite literature indicating a continuing tradition of hunting and fishing (Potter, p. 9, Boger & Perdikaris, 2019), that heritage element did not figure much in adult discussions about the culture—but that missing element may reflect the higher proportion of women participating in the workshops. Cultural elements, and suggested ways of preserving culture, that arose in discussion and interviews that did not appear in artwork or formal questionnaires included: “bad talking” dialect, mentorship, coconut to make hats, and specific uses for calabash such as dishes, bowls and bags. Discussion of language and “bad talking” followed the oral reading of some Caribbean poems that I had brought with me from the States; these came to life when idioms, dialect and inflections were expressed by adults from the region. There was also mention of teaching that occurs—woodworking classes in school, and instruction that could be helpful such as financial instruction, for instance to teach islanders how to make bread rather than to buy it. The latter perhaps was a response to the increasing importation of foods on the island (Boger et al, 2014 p. 339).
<table>
<thead>
<tr>
<th>How can you teach others about the arts and traditions of your island, Barbuda?</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can teach others through picture</td>
</tr>
<tr>
<td>Through painting and pictures</td>
</tr>
<tr>
<td>By showing them what we do in our island</td>
</tr>
<tr>
<td>Through music x 3</td>
</tr>
<tr>
<td>By posting pictures and documentaries on the internet for the world to see</td>
</tr>
<tr>
<td>By posting documentaries about them [the arts and traditions] on the internet along with images for people all around the world to see</td>
</tr>
<tr>
<td>Through music. U can put it on youtube</td>
</tr>
<tr>
<td>Through Art</td>
</tr>
<tr>
<td>I can teach my friend to draw and have fun</td>
</tr>
<tr>
<td>I can show them how to draw color paint and make sculptors and carry them to places to explor the island and life in Barbuda</td>
</tr>
<tr>
<td>By giving them a tour of Barbuda or putting the culture of Barbuda on the internet</td>
</tr>
<tr>
<td>I can teach my friend to draw and paint at school. Writing books and traditions</td>
</tr>
<tr>
<td>By teaching them about your culture and giving them a tour of my country</td>
</tr>
<tr>
<td>By training them to do Art and showing them.</td>
</tr>
<tr>
<td>You can host a tour</td>
</tr>
<tr>
<td>By training the to do thing and showing them</td>
</tr>
<tr>
<td>By showing them the past</td>
</tr>
<tr>
<td>To teach others about art and painting</td>
</tr>
<tr>
<td>You can teach others about the arts and traditions of your island by putting it on the internet</td>
</tr>
</tbody>
</table>
## Table 7. Closing Questionnaire, Adults, 2017

<table>
<thead>
<tr>
<th>What are your favorite forms of art on the island?</th>
<th>How did you learn about this art form or forms?</th>
<th>How do you think others on the island can learn about this art?</th>
<th>What can you do to protect this type of art?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painting, drawing, dancing</td>
<td>School</td>
<td>By introducing info or exposing in a class</td>
<td>Older pass on information to younger generation</td>
</tr>
<tr>
<td>Preparing cultural foods</td>
<td>Learned from grandparents preparing these foods</td>
<td>Through the passing down and teaching of the recipes</td>
<td>One generation teaching the other generation. Have written records of these cultural recipes</td>
</tr>
<tr>
<td>Landscape painting</td>
<td>From school</td>
<td>To have more art classes and workshops like this one</td>
<td>Have an avenue where persons can enjoy - have an art gallery so persons can showcase their work</td>
</tr>
<tr>
<td>Pan playing (music), poetry, storytelling, dance-singing</td>
<td>Home. School. Visiting cultural festival</td>
<td>workshops-seminars</td>
<td>Education on importance of preserving our own culture. Teach younger generation all we know for example - folk songs, local dishes. Record - Document</td>
</tr>
<tr>
<td>Dancing, singing, calypso, pan playing</td>
<td>School competitions, television</td>
<td>Teaching it to them</td>
<td>Keep on practicing it to others. Videotape it (Record)</td>
</tr>
<tr>
<td>Creating jewelry with shell. Taking the stone to make art</td>
<td>To keep it and ways to preserve them for the next generation</td>
<td>By having shows. By reading in a book</td>
<td>Some write book. Keep good record</td>
</tr>
</tbody>
</table>

Lerski
Figure 15. Sunset, 2017, Child. Source: Martha Lerski

Figure 16. Land Tortoise, 2017, Child. Source: Martha Lerski
The closing questionnaires gave participants time to reflect on their most valued cultural elements after they had explored similar questions through art making. Children suggested these ways of gaining or sharing knowledge about their culture: through creating visual art or music, writing books, hosting tours or putting pictures or videos on the internet. Adults mentioned steel pan, calypso, shell jewelry, school competitions, cultural festivals, teaching recipes, intergenerational passing of information, folk songs, showcasing work through an art gallery, keeping records, writing books and videotaping. Combined with cultural elements depicted in drawings and paintings, the research revealed island-specific attributes including a love of diurnal and seasonal occurrences, and the land tortoise, referred to as a land turtle, depicted above.

Field Study II, 2018

The second arts camp took place over a year after the initial camp. I waited to see whether Barbudans relocated or returned from the sister island, and their adjustment was a priority. The numbers diminished by half, from 30 to 15, the location changed from a room at the Church, which had been destroyed by the Hurricane, to a temporary structure, the interim elementary school on the island. Sessions had to be held in the afternoon after school, and before the sun went down, as the school generators only ran during the school day. The evening session for adults took place in the reconstructed Barbuda Pentecostal Church.

Under an updated research protocol, the children’s group was divided into children and adolescents and, as at the previous camp, all youth participants worked among their own age groups in one room.
Not all of Barbuda’s residents have returned from the relocation, and some families have only partly returned, with some staying in Antigua to work or study. It is difficult to separate out what most influenced changes in participants’ responses—the dramatic events surrounding Hurricane Irma, or the inclusion of a more specific Valued Cultural Elements Survey. However, because this is an iterative process, I believe that there is value in continuing with a Valued Cultural Elements survey as a way of facilitating discussion and discovery.

It is worth noting the infrequency of references to British Colonial structures on the island, or of pre-Columbian artefacts that are on exhibit at the island’s museum. Do the depicted elements of nature, family and communal traditions, then, reflect what the residents consider to be their cultural heritage? Some discussions of monuments did occur when building with clay during the first camp. Caves, Martello Tower, and rituals were mentioned in questionnaires and discussion more than via art. Independence Day was mentioned more frequently in 2018. The art sessions provided a relaxed environment for those surveys.

Figure 17. Independence Day Celebration Drawing, Child, 2018.
Source: Martha Lerski
Themes in valued cultural elements survey. In 2018, I introduced the Valued Cultural Elements Questionnaire as the opening survey. The questions were both more specific and exhaustive, aiming to address a broader range of cultural heritage elements, as a prompt for elements that participants might not identify unless reminded of them as cultural heritage attributes. The categories are still broad enough to allow for unique community expressions of those elements. While English is the predominant language in Barbuda, I included language as a category because I intend to use this questionnaire as a template for studies of other cultures.
Table 8. Valued Cultural Elements/Children: This questionnaire asks you to identify and name specific aspects of your Barbudan culture that you most value

<table>
<thead>
<tr>
<th>Language/s</th>
<th>Agricultural/harvest, hunting or fishing practices</th>
<th>Food or Drink Traditions, foods or recipes</th>
<th>Dance</th>
<th>Leadership initiations or customs</th>
<th>Painting, sculpture, weaving</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 4/5</td>
<td>Harvest 1st Sunday in December x3, fish gun, fish net, fishing boat, bait and fishing rod, fishing</td>
<td>Pepperpot x 3, fungi x 2, saltfish x2, cod, fish, lobster, crab, fries, chicken x2, hamburger, sodas x2, ackee x2, cod, fruit punch, lobster, crab</td>
<td>Folk dance 4/5</td>
<td>Election x2, Council, Independence Ceremony</td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>Protocols for meetings with relatives, friends or business associates</td>
<td>Oral storytelling</td>
<td>Writing and Reading Practices</td>
<td>Sports</td>
<td>Land management customs</td>
</tr>
<tr>
<td>Calypso 4/6, soca 4/6, hiphop, rap</td>
<td>Letter x3, calling</td>
<td>Old</td>
<td>Cricket 4/6, football x5, basketball x5,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home-traditions relating to celebrating or maintaining the place of residence</td>
<td>Cleaning customs [Example broom made from native plant, Spring Cleaning...]</td>
<td>Birth customs</td>
<td>Marriage</td>
<td>Burial customs</td>
<td>Customs marking annual seasons</td>
</tr>
<tr>
<td>Christmas feast x4, Thanksgiving x3, Easter Egg hunt or Easter x 4</td>
<td>Christmas cleaning x 2, Spring cleaning, straw broom x2</td>
<td>Christening x 4, Baby Shower x2</td>
<td>Feast x5, Wedding x2, After party</td>
<td>Funeral x4, Acerta</td>
<td>Play in sand x2, play in leaves, Thanksgiving</td>
</tr>
<tr>
<td>Entering manhood or womanhood customs</td>
<td>Religious or communal ceremonies or rituals or rites of passage beyond those listed above</td>
<td>Celebrations/Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you value or appreciate differently any of the above elements, or other aspects of your culture, after Hurricane Irma resulted in the forced evacuation from your island? Please explain:
No x6
Table 9. Valued Cultural Elements/Adolescents: This questionnaire asks you to identify and name specific aspects of your Barbudan culture that you most value

<table>
<thead>
<tr>
<th>Language/s</th>
<th>Agricultural/harvest, hunting or fishing practices</th>
<th>Food or Drink Traditions, foods or recipes</th>
<th>Dance</th>
<th>Leadership initiations or customs</th>
<th>Painting, sculpture, weaving</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 3/3; French 1/3</td>
<td>Deer x2, lobster, seacrod</td>
<td>Turbot, lobster, apple, pancake and syrup</td>
<td></td>
<td></td>
<td>Flower, make sunsets, sculpture</td>
</tr>
<tr>
<td>Music</td>
<td>Protocols for meetings with relatives, friends or business associates</td>
<td>Oral storytelling</td>
<td>Writing and Reading Practices</td>
<td>Sports</td>
<td>Land management customs</td>
</tr>
<tr>
<td>Dancehall, rap, hiphop</td>
<td>Standing, standing for instructions, greeting</td>
<td>No, Old people</td>
<td>Run, track &amp; field, football x2</td>
<td>Party [political]</td>
<td></td>
</tr>
<tr>
<td>Home-traditions relating to celebrating or maintaining the place of residence</td>
<td>Cleaning customs [Example broom made from native plant, Spring Cleaning...]</td>
<td>Birth customs</td>
<td>Marriage</td>
<td>Burial customs</td>
<td>Customs marking annual seasons</td>
</tr>
<tr>
<td>Entering manhood or womanhood customs</td>
<td>Religious or communal ceremonies or rituals or rites of passage beyond those listed above</td>
<td>Celebrations/Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you value or appreciate differently any of the above elements, or other aspects of your culture, after Hurricane Irma resulted in the forced evacuation from your island? Please explain:

Forced evacuation, “The people getting better houses and they cooperate together”, Feeling bad for the people of Barbuda x2
**Young children.** The younger children responded in detail. All children who responded to the Language question listed English. Harvest, the first Sunday in December, was mentioned three times. Fishing was noted multiple times. Many types of seafood were noted in the food category along with hamburgers and soda. Folk dance was mentioned by the majority of young children for the Dance category. Elections, council and Independence ceremony were mentioned under Leadership customs. Children did not note anything under the Painting, Sculpture and Weaving category, signaling that visual art is not a key cultural element on the island. Calypso and soca were noted by the majority of young children, and hip hop and rap were also mentioned in the Music category.

Letter writing and phone calling were mentioned as protocols. In the Oral Storytelling category, one child noted the elderly. There were no responses in the Writing and Reading Practices category. Children overwhelmingly listed cricket, football (soccer) and basketball in the Sports category. There were no responses in the Land Management Customs category. Christian traditions of Christmas and Easter were overwhelmingly listed, and Thanksgiving as well, under the Home Traditions category. Christmas was again noted by some children in the Cleaning Customs, and spring cleaning and straw brooms were also noted. Antigua and Barbuda are overwhelmingly Christian islands, so the notation of Christian traditions is not surprising.
Table 10. **Valued Cultural Elements, Adults**: This questionnaire asks you to identify and name specific aspects of your Barbudan culture that you most value.

<table>
<thead>
<tr>
<th>Language/s</th>
<th>Agricultural/harvest, hunting or fishing practices</th>
<th>Food or Drink Traditions, foods or recipes</th>
<th>Dance</th>
<th>Leadership initiations or customs</th>
<th>Painting, sculpture, weaving</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Fishing (lobster, fish, conch), agricultural harvest, peanut crop x2, tea bush, medicinal herb</td>
<td>ginger beer x2; matate x2; seafood x2, soldier crab fungi, pepper pot, peas and rice and fish</td>
<td>steel pan, banjo, jambul [jambo?]</td>
<td>State Day x2, Warden Day</td>
<td>paint conch shells</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Music</th>
<th>Protocols for meetings with relatives, friends or business associates</th>
<th>Oral storytelling</th>
<th>Writing and Reading Practices</th>
<th>Sports</th>
<th>Land management customs</th>
</tr>
</thead>
<tbody>
<tr>
<td>steel pan x2, bandru, bana, banju</td>
<td>morning, evening, night greetings, having manners</td>
<td>elders, old people, storytelling day</td>
<td>Net ball x2, cricket, dodgeball, raunda x2, hopscotch, laudasq, hatch, catch</td>
<td>Inheritance: male child-the last born x2; Free land</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Home-traditions relating to celebrating or maintaining the place of residence</th>
<th>Cleaning customs [Example broom made from native plant, Spring Cleaning...</th>
<th>Birth customs</th>
<th>Marriage</th>
<th>Burial customs</th>
<th>Customs marking annual seasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>painting and cleaning x2; don't visit the home when raining - a courtesy re cleaning tradition</td>
<td>straw broom x2, course broom for the yard x3</td>
<td>Open bible at Birth x2, home delivery</td>
<td>Palm arch at gate of home</td>
<td>close door to house when dead passing x3; wake</td>
<td>Old Pork Day x 2, Nov. 9; Christmas, Jambul dance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Entering manhood or womanhood customs</th>
<th>Religious or communal ceremonies or rituals or rites of passage beyond those listed above</th>
<th>Celebrations/Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>making broom, sitting with older people</td>
<td>Christmas, Easter and New Year’s services</td>
<td></td>
</tr>
</tbody>
</table>

**Do you value or appreciate differently any of the above elements, or other aspects of your culture, after Hurricane Irma resulted in the forced evacuation from your island? Please explain:**

Hard to depend on international assistance, having to adapt to host community’s (Antiguan) way of life; difficult to be separated from family; drawn closer to members of community in evacuation; missed home, unable to see/supervise what was happening at homeland.
The younger children overwhelmingly noted Christening, and baby showers were also mentioned in the Birth Customs category. All children noted a Feast in the Marriage customs category, some noting wedding and after party. Under the Burial Customs category, children noted funeral and acerta. Children noted individual play traditions for the Customs Marking Annual Seasons category, and also Thanksgiving. The young children did not list anything in either the Entering Manhood of Womanhood category, or for the Religious or Communal Ceremonies element, though the mention of soldier fungi in the food category may have indirectly related to the “living from the land” cave tradition. New Year’s day, birthday and Valentine’s day celebrations were noted by some of the children for the Celebrations/Other category.

It was notable that all of the young children responded with “No” to the question, “Do you value or appreciate differently any of the above elements, or other aspects of your culture, after Hurricane Irma resulted in the forced evacuation from your island.” The 2018 art work, discussed below, showed a greater appreciation for home, and also the introduction of elements unseen or less prevalent in the August 2017 art work.

**Adolescents.** One adolescent listed French as well as English as a language spoken. Lobster and seacrod were noted in the Agricultural/harvest, Hunting or Fishing Practices category, and two young adults listed deer. This may indicate that youth are introduced to the island’s hunting practices. Food and Drink traditions ranged from seafood, turbot and lobster, to pancakes and syrup. While the adolescents did not list anything in the Dance category, they did report Dancehall, rap and Hip Hop in the Music category. Fisheries were noted in the Leadership Initiations or Customs responses. The adolescents noted, flower, making sunsets, and sculpture in the Painting, Sculpture, Weaving section. Standing, standing for instructions, and greeting
were noted under the Protocols for Meeting with Relatives, Friends or Business Associates category. As with the younger children, elderly people were noted under the Oral Storytelling category. The young adults, like the young children, did not report anything under Writing and Reading Practices, though 99% of the population of Antigua and Barbuda is literate (World Factbook, 2016). Books did, however, appear as elements in drawings.

Track and field and football appeared in the Sports category, as well as in the art work. Political party appeared under the Land Management Customs in the teen cohort’s response. The adolescents did not record responses for Home Traditions or Cleaning Customs, but they did report christening and “family becomes happy,” under the Birth Customs. Baby shower appeared in the Marriage customs, as well as small weddings. Adolescents reported wake and after party, as well as burial ground in the Burial Customs category. Easter, holiday season and summer were mentioned as Customs Marking Annual Seasons. “No” was given as a response by the majority in the Entering Manhood or Womanhood Customs category. The caves were noted in the Religious or Communal Ceremonies or Rituals or Rites of Passage Beyond Those Listed Above question; baptism, frigate bird and pink sand were also noted. Caves also appeared in the Celebrations/Other category, as did pink sand and holidays.

Unlike the younger children, adolescents did express themselves on the topic of whether they value or appreciate differently any of the specified elements or other aspects of their culture following Hurricane Irma. Two teens expressed sadness for the people of Barbuda, while another noted that “The people getting better houses and they cooperate together.

**Adults.** Adults expanded further on whether they appreciate aspects of their culture differently after Hurricane Irma and the evacuation. One noted the difficulty of having to depend on international assistance, of having to adapt to the host community’s way of life. Another adult
participant mentioned the difficulty of having to be separated from family. One noted drawing
closer to members of the Barbudan community in evacuation, while another adult reported
having missed home, and an inability to both see and supervise what was happening on Barbuda
while located elsewhere.

English was noted in the Language category, but it was only in the 2017 discussions with
adults that I got a sense that there might be dialects or creole. Lobster, conch and fish were
noted, along with peanut crop, tea bush and medicinal herbs in the Harvest category. Adults
noted traditional recipes in the Food or Drink Traditions category, mentioning ginger beer,
matate, soldier crab fungi, and pepper pot. In the Dance and Music categories, steel pan, bandru,
bana, banjo and jambo were mentioned.

The adult participants more precisely identified a cultural feature in practice on the
island: “Good morning,” “good evening,” and “good afternoon,” and “good night” are
commonly-used greetings in Barbuda; in my experience in the United States, general greetings
such as “hello,” “hey” and “how ya doing? are frequently used. For the Oral Storytelling
category adults, like the younger cohort groups, noted elders. There was also mention of
storytelling day. This element was further explored in the adult art work and conversation.

As with the youth cohorts, the adult group did not report on Writing and Reading
practices. Net ball, raunda, hopscotch, laundasqu, hatch, catch and dodgeball appeared in
responses, in addition to cricket, named by children. Communal land and male inheritance were
named elements in the Land Management Customs category, and the adults provided several
responses for the Home Traditions Relating to Celebrating or Maintaining the Place of
Residence, and the Cleaning Customs categories. Painting and cleaning, and not visiting others’
homes during periods of rain, were specified in the former category, and straw and course broom were noted regarding the Cleaning Customs question.

Home parturition was noted by one participant for the Birth Customs category, and Christian traditions again appeared here, with open bible at birth noted by two participants. Placing a palm arch at the gate of a home of a wedding was noted in the Marriage category, and this was further explained in discussion when participants drew. Three participants noted a Burial Custom, closing the door to the house when the dead body passes in the burial procession; the wake tradition was also noted in this category, and further described during discussion. For Annual Seasons Customs, participants noted Christmas, Jambul dance, and a November Old Pork Day; the latter is a dying tradition.

Unlike the younger cohorts, the adults mentioned some Entering Manhood or Womanhood Customs: making brooms and sitting with older people. While the adults did not mention anything about cave traditions in the Celebrations/Other category or the Religious or Communal Ceremonies categories, mention of soldier crab fungi may indirectly relate to that custom. Adults noted the Christian traditions of Christmas, Easter and New Year’s services. This emphasis on Christian traditions may reflect a sampling bias, and it is possible that the youth cohort, which was larger and not only from the same families as the adult participants, represented a broader portion of the island’s population. However, as noted earlier, the population of Antigua and Barbuda is overwhelming Christian.

**Children’s art work, 2018.** The camp had a diminished number of participants in 2018, with some families not back on the island. The follow up art camp was delayed past summer season because the island was still recovering slowly then.
Beyond what the different participation size may say, the sun and trees were still prevalent in art work, but homes appeared more, which is not surprising, given the very recent relocation—even if many homes were still completely destroyed or damaged in November of 2018, when the students participated in my second art camp.

The August Independence Day holiday, the celebration of freedom from slavery, was a topic noted in children’s art, questionnaires and discussion during the 2018 camp. As with artistic depictions of houses, the 2018 mention of the Independence Day holiday may have reflected a deeper appreciation for what was missing. The 2018 annual Barbuda Caribana Festival was cancelled. Noting that island traditions such as hunting, camping, living in caves, and traditional healing were at risk, BRC researchers Boger and Perdikaris concluded that “The longer the displacement,, the more difficult it is for people to reconnect to their landscape, traditions, and culture” (2019).

Flowers and ocean were still prominent, but television, stores and sports gained mention in the children’s 2018 art work. They mentioned and drew bicycles, and spoke about how they were now able to ride again. The collaborative spirit returned in the three-dimensional work, this time via building with sticks and glue rather than with clay.
### Table 11. 2018 Drawings and Paintings, Children

<table>
<thead>
<tr>
<th>Cultural Elements Frequency</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Element</strong></td>
<td><strong>Frequency</strong></td>
</tr>
<tr>
<td>Sun/sunset</td>
<td>9</td>
</tr>
<tr>
<td>Tree</td>
<td>5</td>
</tr>
<tr>
<td>House/Home</td>
<td>5</td>
</tr>
<tr>
<td>Cloud</td>
<td>4</td>
</tr>
<tr>
<td>Flower</td>
<td>4</td>
</tr>
<tr>
<td>Ocean</td>
<td>3</td>
</tr>
<tr>
<td>Television</td>
<td>3</td>
</tr>
<tr>
<td>Love/heart</td>
<td>3</td>
</tr>
<tr>
<td>Bird</td>
<td>3</td>
</tr>
<tr>
<td>Sport</td>
<td>3</td>
</tr>
<tr>
<td>Store</td>
<td>3</td>
</tr>
<tr>
<td>Pet</td>
<td>2</td>
</tr>
<tr>
<td>Bicycle</td>
<td>2</td>
</tr>
<tr>
<td>Family</td>
<td>2</td>
</tr>
<tr>
<td>Person-abstract</td>
<td>2</td>
</tr>
<tr>
<td>Food</td>
<td>2</td>
</tr>
<tr>
<td>Sea Creature</td>
<td>2</td>
</tr>
<tr>
<td>Emoji</td>
<td>2</td>
</tr>
<tr>
<td>Camping</td>
<td>1</td>
</tr>
<tr>
<td>Independence Celebration</td>
<td>1</td>
</tr>
<tr>
<td>Religion/religious</td>
<td>1</td>
</tr>
<tr>
<td>Book</td>
<td>1</td>
</tr>
<tr>
<td>Beach/sand</td>
<td>1</td>
</tr>
<tr>
<td>Birthday</td>
<td>1</td>
</tr>
<tr>
<td>Camping</td>
<td>1</td>
</tr>
<tr>
<td>Flag</td>
<td>1</td>
</tr>
<tr>
<td>Music/instrument</td>
<td>1</td>
</tr>
</tbody>
</table>

**Group work: Imagine what can you make to preserve your culture:**

- Community Center with café, food, store
- Museum
- Seafood Restaurant, recipes
- Store with clothing
- Book “My Culture” Library

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Figure 18. Children Group Sculpture, 2018

Source: Martha Lerski
Group work, involving planning sketches and building, addressed the question: Imagine what you [children] can make to preserve your culture. Responses included a community center, a museum, a seafood restaurant, a clothing store, and a “my culture” book symbolizing a library*.

Another element that appeared in the art work in 2018 was clothing and clothing stores, particularly for the adolescents, who chose to construct the latter for their group project. That choice may relate to their relocation period in Antigua, where consumer products are more abundant, but a Barbudan twist appeared, however, as teens explained that the store was specifically for Independence Day clothing.

*During the fall of 2017, I had organized a book drive with the Office of Community Engagement at my workplace, Lehman College to send books to Barbuda schools in 2018.
Figure 20. “I love to be home” drawing, 2018. Source: Martha Lerski

Figure 21. Whale, sea and sun. Source: Martha Lerski
Adults’ art work, 2018 (see table 5). Table 5 depicts frequency of drawing and painting subjects. Gross numbers reflect a drop in numbers of participants as well as only one session, as opposed to two sessions in 2017. In 2018, the more focused questions of the valued cultural elements survey facilitated drawing about cultural heritage topics. With an extended timeframe, I would recommend that warmup art exercises be followed up with a valued cultural elements survey, followed by a closing questionnaire after more drawing, painting, or other visual or other arts participation.

At the second field study, adults’ artwork focused on traditions: storytelling, straw/course broom making, the palm leaf wedding tradition, and the wake funeral ceremony. During the discussion period, there was a greater sense of urgency among adult participants than during the pre-hurricane art camp about preserving cultural heritage. Examples of art work depicting traditions are below. Adult participants chose to focus on one cultural element for their group art work, the straw broom tradition. They felt an immediacy because the only remaining practitioner of the art of straw broom making is elderly and has not passed on the knowledge. The group came up with a plan to hold a church-sponsored straw broom making contest, after participants had benefited from the instruction of the broom making master.

One adult drew a “stone heap,” below, and explained that elders used to tell stories to youth while breaking stone for home construction work. With the advent of globalization and the importation of already-broken stone, that tradition is fading as families and community members do not set that time aside to share stories.
Figure 22. Stone Heap Storytelling Drawing, 2018.  
Source: Martha Lerski

Figure 23. Straw Brooms Drawing, 2018.  
Source: Martha Lerski
Closing questionnaires, 2018. The children’s closing questionnaires took a more traditional perspective on what art is, many naming drawing and painting, noting that they learned those arts from family, friends and schools. The children suggested that social media and traveling could help others to learn about those arts. WhatsApp was specifically named by some children, flagging the importance of technologies available for no monetary cost in low income or disaster-impacted countries; this, however, signals a vulnerability, as such technologies may involve tradeoffs regarding privacy and information security. Many people throughout the world use “free” WhatsApp (Statista, Dossier, 2018), owned by Facebook, but the application, like many technologies, does present hidden costs (Goel, V., & Raj, S., 2018). Children suggested ways that art could be protected, the majority responding that keeping Barbuda safe and protecting the island were ways to protect culture. One child suggested building a museum. The island’s archeological museum miraculously survived Hurricane Irma, though it is located very near to the lagoon, but the children’s museum was destroyed.

Adult’s closing questionnaires reflected a broader definition of art. They included agriculture, gardening, storytelling, fishing, farming, and cooking of traditional recipes. Adults reported learning about these art forms through intergenerational learning or school. Regarding how others on or off of the island could learn about the named art forms, participants suggested: teaching the young, writing books or stories, training sessions, and displays. This cohort suggested the following ways of protecting those art forms: documentation, making a book or photographing; teaching youth; practicing traditions; and holding competitions.

Analysis of Questionnaires, Art Work and Observations

The amended IRB protocol’s specifications regarding younger and older children during the second arts camp provide a lens for more granular findings. For instance, for the group art
work in 2018, the older children chose to create a shop to sell attire for the Independence Celebration celebrating freedom from slavery, whereas the younger children worked on specific elements of a community center that they envisioned as one way to preserve their culture.

The arts camp element in the research design for my field studies not only enabled the gathering of information about specific cultural elements, but provided a context for discussion and deeper exploration of valued elements identified by participants. For instance, when observing children, they shared that one tradition involves camping with family every summer for two weeks. One child explained that a March Christian Crusaders tradition takes place, but that it did not occur in 2018, after Hurricane Irma. Riding bikes and walking dogs were discussed, though the dog element was not fully explained by the children, other than to note in drawings and vocally that they were glad to have pets again.

I had heard isolated reports that dogs were being shot or poisoned by the Antiguan police forces who were on the island after Barbudans were evacuated, and the general press noted feral dogs (John, September 14, 2017). The killing of dogs had a cultural implication as well, in that the islanders who regularly hunt as a part of the subsistence economy depend on those dogs that are highly-trained for specific tasks and for particular types of hunting on the unique geography of the island.

Discussions with adults during the 2018 art session brought forth specific information about vegetation on the island. For instance, islanders use soursop to calm new babies, and anise seed is also used for purposes of calming. During the 2017 arts camp, an adult participant had mentioned the use of soursop leaves’ medicinal use for cancer.
<table>
<thead>
<tr>
<th><strong>What are your favorite forms of art from the island of Barbuda?</strong></th>
<th><strong>How did you learn about this art form or forms?</strong></th>
<th><strong>How do you think others on or off of the island can learn about this art?</strong></th>
<th><strong>What can you do to protect this type of art?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>sculptures</td>
<td>be waiting to hear the instructor</td>
<td>by traveling</td>
<td>by keeping barbuda safe</td>
</tr>
<tr>
<td>drawing the animals in the sea</td>
<td>I learned this art form at my school.</td>
<td>They can learn about it by texting them about it on whatapp or just telling them in person.</td>
<td>To protect it I would practice it and make it become part of my Socializaion. I can stop drawing for a little.</td>
</tr>
<tr>
<td>drawn [drawing] and colouring</td>
<td>I just learned from my family and friends.</td>
<td>They can learn if I show them or they just learn by their family.</td>
<td></td>
</tr>
<tr>
<td>My favorite sculatuner</td>
<td>Sculatunering</td>
<td>What app</td>
<td>by keeping barbuda safe</td>
</tr>
<tr>
<td>flowers</td>
<td>I haven't learn a lot about many flowers as yet</td>
<td>They can learn about it by discovering the land</td>
<td>By Protecting the island.</td>
</tr>
<tr>
<td>Drawing</td>
<td>From my brother and I started to enjoy it myself. I'm a bit shy to draw around others but when I do I really enjoy it. I mostly draw animations and not so good with other things but I try</td>
<td>I'm not sure</td>
<td>I'm not sure</td>
</tr>
<tr>
<td>emojis</td>
<td>it pop up in my head and it became a good stuff to Draw</td>
<td>Post it and make a better stuff with it</td>
<td>Don't let No one make fun of it</td>
</tr>
<tr>
<td>drawing and painting</td>
<td>By practicing</td>
<td>People posting art</td>
<td>Build a museum</td>
</tr>
<tr>
<td>Some people can draw</td>
<td>By writing</td>
<td>I show people some art</td>
<td>Keep it away from my brother</td>
</tr>
</tbody>
</table>

Table 12. Closing Questionnaire, Children, 2018
Table 13. Closing Questionnaire, Adults, 2018

<table>
<thead>
<tr>
<th>What are your favorite forms of art from the island of Barbuda?</th>
<th>How did you learn about this art form or forms?</th>
<th>How do you think others on or off of the island can learn about this art?</th>
<th>What can you do to protect this type of art?</th>
</tr>
</thead>
<tbody>
<tr>
<td>storytelling, gardening, farming, fishing</td>
<td>asking parents. Teaching children</td>
<td>Having them on display. Having road show.</td>
<td>Make a book</td>
</tr>
<tr>
<td>Drawing and painting</td>
<td>In school</td>
<td>By having training sessions/also seminars for all</td>
<td>By documenting, taking pictures.</td>
</tr>
<tr>
<td>Agriculture. I love planting</td>
<td>I learn about this art form by coming to the sessions.</td>
<td>By pictures, by video, writing books</td>
<td>By teaching it to the younger generation.</td>
</tr>
<tr>
<td>Traditional foods. Easter: Ducuna/Potatoe Dumpling and corned Fish. Od Year’s night: Yard Fowl, Rice. Soldier Crab fungi storytelling, fishing</td>
<td>From my grandmother</td>
<td>Younger ones show interest in learning and continuing this art</td>
<td>Annual competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>share with children. Keep tradition going</td>
</tr>
<tr>
<td></td>
<td>grandparent, old people in village</td>
<td>write stories, social media</td>
<td></td>
</tr>
</tbody>
</table>

67
Adults described the Old Pork Day tradition to me in November of 2018, noting that someone had died, and that the tradition had died with them. The individual would “go around on a donkey,” and would “dress up and make children afraid.” One tradition that has died out on its own is the marriage tradition of putting palm leaves across the homes of those invited to the celebration; participants noted that the custom had also signified who had not been invited.

Both children and adults noted the custom of holding a wake at home within 24 hours of a death. The adults described that this is less common now, but that the custom was to place the body on ice in the grass. That tradition also involves a community of friends a one pot meal, and also drinking rum at the gathering.

While deciding which cultural tradition to draw about as a group, the adults noted that in 2015 there had been a church-sponsored coal pot cook off as a way of passing on an old tradition—with a prize for the best cooking. The participants created a group drawing of straw brooms and began planning to have a broom-making contest to perpetuate the tradition.

Ideally, the same Valued Cultural Elements questionnaire would have been administered at both the initial and follow up visits. However, this research is in itself a meta study—a study of how best to study, and as I was both designing my study taking into account subject knowledge and methodologies gained through my MALS studies, and—more significantly—had not anticipated a return visit after an immediate example of what transpires when an entire population must relocate due to climate-change-linked causes, the match of categories before and after the event was not part of the initial conception of the research.

The extra level of planning, community involvement in preparation, space requirements, expenses for art materials, researcher familiarity or comfort with supervising arts-based research,
may make a combined arts camp and cultural elements survey too complicated in some instances. Also, work with children requires an extra level of training and supervision; in addition to the university protocols guiding research, I had experience working in school libraries and had youth-specific library certification. The art work, discussions and responses of the participating children provided valuable insights, and also engaged youth in their community’s evaluation of and appreciation of local cultural heritage. While a researcher or community organizer might decide to eliminate the art camp elements of a cultural heritage study or outreach, I believe that even when art work did not directly portray elements of cultural heritage, the process facilitated thinking, engagement, trust and potential future preservation efforts of participant stakeholders—thus making the additional complications worthwhile.
Conclusions

A major finding of this study is that people from a politically and historically-affiliated group, Barbudans and Antiguans, living in close proximity and of the same religious and ethnic background, may practice or prioritize cultural values differently. Perspectives on land are an example of this in Barbuda. Thus, when both documenting and preserving cultural elements it is important to gain a representative sample from geographic regions as well as representative economic and social groups. The regions most impacted by physical changes of climate change are underdeveloped economically, so the burden further widens global economic inequalities. In addition, inequalities within countries and regions must be considered in both proactive preventive interventions as well as with regard to the implementation of such policies as carbon reduction. Economic and environmental resilience are also related to cultural factors such as land policies, communal governance, and traditional knowledge.

The combination of globalization and climate change poses extra challenges beyond the two distinct factors. I earlier noted the loss of the storytelling vehicle in absence of a need for breaking stones now that broken rocks are imported. Awareness of changed or disappearing customs may provide opportunities for communities to find other ways to impart and perpetuate knowledge and sharing systems. For instance, the arts camp participants, in the questionnaires as well as in discussion, suggested ways that storytelling or cleaning traditions could be continued via contests, festivals, and school-based forums.

Writing about Inuit youth in “Protective Factors for Mental Health and Well-being in a Changing Climate,” MacDonald et al. identify five key factors towards protecting mental health in a circumstance of cultural shifts triggered by environmental losses: strong communities, Inuit culture, staying busy, and relationships with family and friends (p. 133). Programs and services
are there employed as proxies for access to land and its associated livelihood and cultural activities. Loss of traditional modes of mentoring and intergenerational transfer of knowledge[s] “challenges the protective nature of connecting to Inuit culture” (p. 137). The study provides insight into how an Indigenous community whose culture is deeply connected to ice and cold weather, has adapted to involve youth in traditional cultural practices. One potential outcome in extreme cases of severe changes to local environments, or relocation due to irreversible climate changes, would be to look at how those Indigenous youth in Labrador Canada undertook tribal/community-supported adaptations to address mental health and well-being. (MacDonald et al., 2015).

Given recent, post-Hurricane Maria, developments in Puerto Rico, I have wondered whether there might be some shared experiences to compare in the adjustment of two islands where many people temporarily or permanently relocated to “sister islands”—the U.S. mainland in the case of Puerto Rico, and the island of Antigua in the case of Barbuda. In each case, the disasters triggered responses which might not have been anticipated by the residents of Barbuda or Puerto Rico (Mazzei, 2018; Bonilla, Brusi, & Bannan, 2018). Different cultural values, legal systems, economies or land ownership factors do impact the way that climate-related migrations manifest.

David Lempert argues that environmental reformers have framed a perspective whereby species’ rights to protection translate into a view that groups, not solely its individual members, have rights. “They have implanted the notion that the survival of individual members depends on the protection of the group” (2010b, p.521). Boger and Perdikaris (2019) identify current political developments in Barbuda as “cultural genocide,” a term Lempert writes has predominantly been used to describe destruction of physical heritage sites, and he prefers the
description “culturecide” with regard to the “the destruction of culture but without killings” (Lempert, p. 528).

Both the art work created and the process of making the art revealed significant cultural traditions and elements. For instance, the communal land element manifested in collaborative art work. The occurrence of trees, birds, and ocean life further reflected the value of nature and place in the cultural heritage of Barbuda, but also that there is a tenuous tie when relocation must occur. How different might those responses be in situations when a majority of community members are unable to return to the land where cultural heritage is closely-linked to the tradition of land ownership, to its agricultural system and so on?

One potential positive outcome of further studies and documentation such as this project could be to assist with the identification, or community maximization, of cultural knowledge to prevent or combat some of the damages brought by climate change. For instance environmental degradation such as land erosion and water salinization can be mitigated somewhat by planting native species, utilizing traditional landscaping and water harvesting methods and applying appropriate zoning (Ataur Rahman & Rahman, 2015, pp. 84-86) or resisting or carefully managing deforestation (Voggesser et al.), adapting to nuances in climate or seasons (Rose), or employing general respectful treatment of land, air and water—including reduced carbon-producing use of fossil fuels.

Discussions and drawings relating to traditions such as straw broom making, Independence Day celebrations, cave culinary traditions, coal pot cooking, Christian religious traditions, fishing and oral storytelling revealed repeated elements in the Barbudan culture. Those traditions, and a communal spirit of collaboration could be harnessed by the community to address shortages or flooding, or to resist the introduction of, for instance, tourist golf courses
that would utilize already scarce fresh water supplies or damage coastal sea life via heavy desalinization output. Though in Barbuda the breaking of stones tradition supporting oral storytelling has died out, iterations could arise, such as household or community-wide storytelling events.

While it is difficult to separate out effects of globalization from climate change, the two combined together put stresses on ecosystems such as aquifer, local traditions that adapt water use to annual or drought cycles, or traditional freshwater and erosion-protecting local flora such as mangroves. With an open access database, with opportunity to share as much as decided upon by communities, environmental and cultural coping strategies could be shared with other climate-stressed cultures. For instance, because I had attended the 2017 Southwestern Tribal on Climate Change (2017), I was aware of Native American efforts to create climate adaptation plans. These are ongoing efforts which are tribe and location-specific. Others could learn from successful strategies such as those.

Multiple case studies and cultural element insights can be pieces of a global effort to address what the UN Secretary General has identified as “the defining issue of our times.” – climate change “(Sengupta, 2018). The challenge poses mobility-of-action requirements similar to those marshalled when the United States prepared for nuclear attacks during the middle of the 20th Century. Reviewing the, albeit military-sponsored, efforts that went into Arpanet, the unintended precursor to the current internet, one can imagine “cooperative problem solving” to create information architectures to open silos of information that might assist with climate change prevention or adaptation—a network where information resources “could be focused on larger cognitive goals requiring interaction to solve problems too large or complex for an individual” (Lukasik, 2011).
Suggestions for Methodology Revision and Future Study or Intervention

While news stories and historical accounts report differences in political philosophies between Barbuda and Antigua, within the island of Barbuda itself my sample may not reflect the full diversity of political, economic or religious perspectives of the population. This study’s youth participants were drawn from the island’s one local high school and one elementary school—but without independent knowledge of the island and active preparation with potential stakeholder communities, this study may possibly miss some stakeholder representation. I do not claim that the study sample here is fully representative of the island’s community, now under the pre-Irma 1,800 population, and the research was from the outset a work in process, an exploration towards best practices for a proactive community exploration and discussion of valued cultural elements.

One difficulty of having a researcher visiting without her own broad knowledge of a population, and without wide contacts, during a brief research time period, has its dangers in terms of gaining a representative sample of perspectives. My cohort includes different ages but may not fully capture all perspectives on the island. Here are some suggestions:

- Seek to include, or to create additional studies that include formally representative samples from societies being researched
- Continue to involve community stakeholders in planning and to proceed via IRB or similar protocols to ensure avoidance of exploitative methods
- Seek to document beyond widely-reported or recorded elements, leaving room for opt-outs relating to secret traditions as noted by Fernandez-Llamazares & Cabeza and the Climate Change Tradition Knowledges Working Group
• Possibly create a more simply-worded valued cultural elements instrument for children, that still allows for the richness of response offered by children.

• Continue to allow for different modes for expression. Some participants responded more freely or specifically via visual art, written or oral responses.

• Be cautious re parachute/single visits. Research history and culture intensely if undertaking a one-visit research study, and deliberately involve stakeholders in planning of arts camps.

• Consider other ways of engaging in an arts camp, but not necessarily a visual arts based camp in places without access to materials, volunteers to assist with preparation of, supervision around, and cleaning up after camp. Perhaps consider tapping in to local cultural traditions, such as drum playing, that could engage participants and contribute to discussions ahead of administering a Valued Cultural Elements Survey.

• For clay-based art making, consider evaluating soil samples ahead of time at the location to see whether the soil would be safe for use in creating place-based clay instead of having to import or purchase salt and flour on site for play dough.

• To scale the study up, employ a Grounded Theory methodology from the outset, and categorize artwork and cultural element responses in machine readable broad categories such as flora or fauna, visual or intangible heritage—with subcategories such as fruit-bearing trees or pottery. Utilize resources and collaborate with subject experts such as Linguists, Biologists or Archeologists to accurately identify categorize named cultural elements. Employ or retroactively impose a controlled vocabulary system to enable efficient database analysis on.
larger data sets, yet to identify specific elements such as Barbuda’s frigate birds and hibiscus flowers, as illustrated in 2017 drawings, in figures 23 and 24 below.

Figure 24. Frigate Bird Drawing. Source: Martha Lerski

- To add nuance to scaling up of oral interviews, perhaps code for tone
- In analyzing data, utilize coding tools such as a Python count vectorizer or part of speech tagger to efficiently extract elements to categorize
Alerted to unpredictability of environmental-data preservation during the current U.S. national administration (Harmon, 2017), it is worth considering ways of protecting digital data. Best practices could include the housing of digital and other data across different servers, in different locations and formats, looking to an organization such as Stanford University’s LOCKKS, which and operates with an understanding that "lots of copies keep stuff safe" is a digital preservation best practice (LOCKKS, preservation-principles), and which has designed means of protecting against both technological and political threats to content (LOCKKS, why-lockss). Furthermore, when engaging in cultural documentation projects such as this study,
participant privacy preferences and communal requests must be considered from the outset. “Conservation practitioners should respect the internal mechanisms guiding the telling of the stories and refrain from granting any access to indigenous stories not intended to be communicated to outsiders. (Fernández- Llamazares, & Cabeza, 2018).

Just as the creation of the Valued Cultural Elements survey developed over the course of my studies and called upon the expertise of those in related fields, the development of a structure to support expansion of this project must call upon additional knowledge and best practices. For instance, South African researchers proposed “A Software Architecture for an Indigenous Knowledge Management System” (Fogwill, Viviers, Engelbrecht, Krause, & Alberts, 2011), and also raised issues beyond computer networks. Recognizing that Indigenous Knowledge is both “fragile and at risk of being lost,” but also vulnerable to biopiracy from those who wish to patent or prioritize profit above other outcomes, they proposed a system that protects the rights of knowledge holders, restricts access to confidential Indigenous Knowledge information, and takes steps towards digital preservation. Such work complements Tapfuma’s aim of opening up African Traditional Knowledge Systems.

Returning from the realm of digital architectures, cultural heritage protection lessons can be taken from effective relocation efforts. Writing in “The Impact of Climate Change on Tribal Communities in the US: Displacement, Relocation, and Human Rights,” Maldonado et al. found “positive outcomes brought about by direct community involvement and bringing people together from the local community,” along with other parties such as government, anthropologists and engineers. The success of President Franklin Roosevelt’s Resettlement Administration’s response to relocation following the Dust Bowl, a 1927 flood, and the Great Depression, did not employ “a top-down bureaucratic structure” (p. 609).
Barbudan study participants proposed the engagement of schools and community organizations, and the encouragement of intergenerational knowledge sharing towards preserving cultural heritage. In “Assessing the Vulnerability of Social-Environmental Systems,” researchers concluded that “vulnerability is inherently about ethics and equity,” and that “its cultural, political-economic, and physical geography is essential to its evaluation” – requiring flexibility and attention to nuances towards relevant and place-specific assessments with “particular stakeholders in mind” (Eakin & Luers, 2006, p. 388).

This case study serves as one template for local action towards adaptation or culturally-attuned relocation. Along with adaptation planning that involves local stakeholders, global proactive resettlement strategies, particularly for peoples living in areas most vulnerable to climate change, is necessary now: “All areas that cannot be protected through increased coastal defenses for practical or economic reasons need to be included early in long-term resettlement and reintegration programs that make the process acceptable for the affected people” (Biermann, p. 83, 2010).

Considering the specific adaptation issues facing small islands such as Barbuda, “Barriers to Reducing Climate Enhanced Disaster Risks in Least Developed Country-small Islands Through Anticipatory Adaptation’s” key findings reiterate some of this case study’s primary conclusions. That 2014 study identified these central barriers to adaptation: the failure to harness communities, local government and island councils; and “a need to recognize the significance of cultural knowledge and practices in shaping adaptive choices of communities in SIDS.” (Kuruppu, N., & Willie, R., 2015).

The Climate and Traditional Knowledges Working Group (2014) emphasizes the term “‘traditional knowledges’ deliberately in plural form because knowledges are emergent from the
symbiotic relationship of indigenous peoples and places – a nature-culture nexus.” In creating, implementing, or assisting with efforts to proactively or contemporaneously preserve cultural heritage, I would recommend sensitivity to communities’ perceptions of and preferences regarding cultural elements. In the case of Barbuda, the community’s land heritage is of primary importance.
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