Support Strategies for Socially Marginalized Neighborhoods Likely Impacted by Natural Hazards

Coastal Resilience Center
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EXECUTIVE SUMMARY

The 2018 Disaster Recovery Reform Act (DRRA) directs the Federal Emergency Management Agency (FEMA) to reserve up to 6 percent from post-disaster grant funding and support pre-disaster hazard mitigation through the Building Resilience Infrastructure and Communities (BRIC) initiative (DRRA, Division D of P.L. 115-254). Through the BRIC program, local communities, federally recognized tribes, and U.S. territories are encouraged to take proactive mitigation actions to reduce risk and improve resiliency (FEMA, 2020a). However, evidence suggests federal mitigation assistance has disproportionate impacts on socially marginalized groups and under-resourced neighborhoods. Recent studies show that populations living in jurisdictions who received financial support from FEMA aid programs like the FEMA Public Assistance Funded Projects or FEMA's Individuals and Households Program, experienced growth in wealth inequality (Howell & Elliot, 2019) and household debt (Billings, Gallagher & Ricketts, 2019).

A research team from the Coastal Resilience Center at the University of North Carolina at Chapel Hill reviewed the literature on vulnerability and assessed meaningful programs that meet socially marginalized populations' needs as they prepare for the next natural hazard. The timeline for the project extended from January 2021 to June 2021.

The purpose of the report is to improve mitigation efforts by addressing equity in emergency management. To achieve this, we define vulnerability through an equity lens, identify how assistance programs equitably distribute support to socially marginalized communities and reveal barriers to community resiliency and federal investment. Ultimately, this report will support the creation of national policy for federal organizations like FEMA, the National Oceanic and Atmospheric Administration (NOAA), and others. Specifically, this report focuses on five overarching research topics:

1. Identify disaster resilience needs of different types of marginalized groups.
2. Identify the types of organizations that are engaging marginalized groups, and how.
3. Reveal barriers to community resiliency and federal investment under the BRIC program to meet needs.
4. Propose policy strategies to increase federal investment effectiveness in increasing resiliency and reducing risk for marginalized populations.
5. Identify future research to improve how mitigation assistance programs influence marginalized populations' capacity to be more resilient.

Methods

The research team applied Critical Race Theory (CRT) as an equity lens to address gaps in disaster management. CRT theorists argue that racism is embedded within our nation's policies that allow for winners and losers based on race and not merit. Using this lens, the team collected and reviewed over 250 peer-reviewed articles, books, government documents, policy briefs, and websites related to hazards or vulnerability. Additionally, the team reviewed archival data from organizations that focused on supporting marginalized communities. This effort resulted in the identification of 95 programs in all 10 FEMA regions across 38 states and one U.S. territory. The team organized readings and archival documents into descriptive categories and themes. As a

form of validity, the team used an advisory committee of experts to review the content for reliability.

Summary of findings

1. **Identify disaster resilience needs**

   Words matter and vulnerable is not a noun. We argue that the current usage of the term *vulnerability* upholds a deficit-based approach to understanding the experiences of socially and historically marginalized communities. The term is homogenous and overly simplifies group diversity and problems. We recognize that words and language matter, especially when identifying systemic racism in emergency management.

   Understand that history matters. Historically, people of color were deemed property, removed from their property, or were given low-valued property, all of which were motivated by White supremacy. Federal laws permitted organizations and people to legally cast households of color into low-resourced spaces that were likely near hazardous environments. Today, systemic racism persists since people of color, on average, have little to no generational wealth and are likely residing in spaces with existing gaps in wealth, health, education, housing, and access to resources, all of which makes them more predisposed to natural disasters and less likely to recover.

   Different groups need different supports. Natural disasters disproportionately impact marginalized people. According to our literature review, people of color, the elderly and very young, women, and those in poverty are the most negatively impacted by disasters. Due to histories of violence, contemporary systems of oppression, and how these systems intersect in individuals' lives – these groups have social stressors that leave them with increased exposure to risk and greater likelihood of suffering.

2. **Identify the types of organizations that are engaging marginalized groups, and how**

   Interventions are targeted. For marginalized communities affected by natural disasters, considerable support comes from within – both top-down approaches from formal organizations (e.g., local governments, schools, and churches) to bottom-up approaches from reliance on informal organizations (e.g., family, friends, and social networks). Studies showed greater success with formal organizations that used culturally appropriate interventions with communities. Archival records revealed that such program interventions provided the following short- and long-term services to residents: housing (e.g., payments), emergency financial aid (e.g., paying utilities), and other personal services (e.g., mental health services).

   Trust and communication are essential. Findings from the literature review and archival records showed that trust between organizations and community members was crucial. Overwhelmingly, organizations that support intervention programs determined their ability to gain trust from reaching targeted groups is due to their physical location being situated in the community and their ability to build lasting and more personal relationships. Most trusted organizations were best able to communicate information that was valid, comprehensible, and understood by marginalized populations. Archival records showed that 70 of 85 organizations (73.7 percent) used multiple platforms to communicate with residents (e.g., social media, word of mouth, and advertisement).

Mitigation was missing. Our archival work showed that 2 of 95 organizations (2.1 percent) explicitly addressed mitigation efforts while 19 of 95 organizations (20.0 percent) provided long-term recovery services for communities in need of extended support. The remaining organizations applied short-term programs that addressed immediate needs. This discrepancy could be due to communities feeling less recovered from past events and unable to address future disasters.

3. **Reveal barriers to community resiliency**
   Barriers faced by marginalized communities. Our review of the research pointed to four barriers marginalized communities face to resiliency. These include: lack of inclusion in local public mitigation and recovery policy decision making, lack of stable housing including renters and those without a home, limited communication either by not receiving information or having minimal access, and structural racism where groups are denied support to recover based on their race or ethnicity.

   Barriers faced by organizations supporting marginalized communities. We identified seven barriers that programs faced when supporting socially disadvantaged groups including: lack of trust with larger organizations located outside of communities, limited access to technology that connects residents with information, unqualified providers of aid who are not culturally competent in the communities they serve, inequitable resource distribution that benefits privileged groups or does not provide appropriate supports, challenges with mental health, and ineffective timing that does not focus on long-term mitigation and resiliency investments.

4. **Reveal barriers for federal investment under the BRIC program**
   Inequities even before the application is released. We found concerns around the timeline, cost-share agreements, and eligibility requirements upon reviewing the BRIC application process. The existing timeline for the BRIC application is between September and January. This period primarily falls during hurricane season and will likely create additional barriers for marginalized communities living in coastal communities to apply, given the frequency of storms, the repeated loss they face, and the inability to recover from previous events fully. Next, the cost-sharing agreement for *small and impoverished communities* requests a 10 percent share on projects allowing only those who have the financial support to participate, leaving out urban impoverished communities. Lastly, the eligibility does not include all marginalized groups, specifically state-recognized American Indian and Alaskan Native (AIAN) tribes.

   Existing gaps through the application process. The research team investigated how the application process, and its content, created additional barriers for marginalized groups to complete the BRIC application. We noticed difficulty in finding the application online and could not see an example of a high-quality submission. Additionally, we wondered how individuals living in rural communities or places with limited broadband access could view and submit the application. Once we found information on the application, we noticed the terminology privileged those with extensive experience in the emergency management

community. Both gaining access and comprehending content create more barriers for groups with limited access to technology and education.

Biased aspects of the evaluation and awardee process. The team reviewed how BRIC personnel evaluated applicants and the number of those selected for the non-financial Direct Technical Assistance (DTA). We found that the first evaluation phase, known as the Technical Evaluation Criteria, provides extra points to those awarded a FEMA grant in the past and provides the smallest point allocation to projects that work with small and impoverished communities. In this existing structure, individuals with a history of receiving federal awards that do not include marginalized communities are given higher marks than first-time federal grant appliers working on a project in an underrepresented community. In addition, the DTA initiative only allocated up to 10 applicants to receive assistance. Such a low probability of success encourages a perception of high competition that may persuade potential groups to devote their limited time elsewhere. This limitation works against the goal of the DTA initiative, which is to ensure that marginalized communities across the nation and U.S. territories have an opportunity to receive non-financial support for mitigation efforts.

Policy recommendations

Based on our literature review, review of archival data, and conversations with experts, we created the following list to display recommendations for supporting the BRIC program in providing equitable mitigation resources to socially marginalized communities. Our recommendations are ordered based on time and effort, from the item with the least effort positioned first ranging down to the last recommendation that will take the most effort and time.

1. **Address short-term needs – the BRIC proposal, review, and selection process**
    - Extend the enrollment period to allow potential applicants to connect with other communities to strengthen their applications or give them time to recover from a possible natural hazard.
    - Expand the 90/10 percent cost-share requirements to all low-income marginalized communities and not just those in "small and impoverished" spaces.
    - Conduct a series of cognitive interviews with marginalized populations who do not have an emergency management background but have experienced a natural disaster. The reviewers will check documents to ensure content is relevant and clear for future like-minded applicants.
    - Create multiple options for potential applicants to download or gain access to the application.
    - Increase the number of DTA selections to above 10.

2. **Address long-term needs – the BRIC proposal, review, and selection process**
    - Partner with other federal agencies like USDA Rural Development, the U.S. Department of Education Disaster Recovery Unit, and more prominent organizations like the National Association for the Advancement of Colored People (NAACP), Bureau of Indian Affairs, the League of United Latin American Citizens, and the Boys and Girls Club, to name a few. Partnerships with such organizations will assist the BRIC program and personnel in distributing information to

marginalized communities about the presence of the program and the DTA initiative.
- Remove all cost-sharing responsibilities for all low-income marginalized communities.
- Expand eligibility to all marginalized groups (e.g., state-recognized AIAN tribes) and remove limits on the number of DTA selectees.

3. **Improve communication between agency and community**
    - Expand the BRIC porgram's networks and include various agencies and organizations that focus on meeting the needs of marginalized groups.
    - Partner with national organizations and local communities to assist with community-wide assessments to determine tailored and specific needs.
    - Collect information from marginalized communities on the most valuable communication methods used by residents.

4. **Create a culturally competent intervention that fosters community and trust**
    - Continue to rely on partnerships and build new relationships with local non-profit and faith-based organizations to assist with building community and trust. Our findings suggest that applying participatory action research (PAR) would be an effective mechanism for community-building capacity.
    - Create opportunities to build the leadership capacity of community members representing marginalized communities that have limited to no previous connection with emergency management. By creating a mutually supportive environment, both BRIC personnel and community members can generate mitigation goals that directly align with the community's needs.

5. **Acknowledge and dismantle systemic racism**
    - Acknowledge and work to dismantle structural racism, specifically by addressing policies and perspectives that maintain White supremacy. Structural racism in emergency management means that discrimination is embedded in emergency management practices where marginalized groups are prevented from equitably receiving resources for hazard mitigation and recovering from disasters. Maintaining White supremacy in emergency management means that White advantaged communities continue to receive better and more frequent support compared to their disadvantaged peers or communities of color. Dismantling these racist structures means striving for equity and justice.
    - Create and use an equity framework to assess shortcomings, injustices, and inequities within the BRIC program.
    - BRIC personnel participate in culturally competent trainings that increase awareness of marginalization.

Future direction

We understand the urgency in learning how to best support marginalized communities as they prepare for the next disaster. However, we caution in providing future research prompts since that may detract from the impact structural racism has on emergency management and marginalized communities in the United States and U.S. territories. We recommend that the BRIC program:

- Conduct evaluations of current methods to assess the extent to which disparities are found within the program.
- Evaluate items implemented from the policy recommendations. Having a clear assessment of how BRIC personnel are selecting and responding to marginalized communities will allow the program to create tailored and responsive next steps.

INTRODUCTION

In the 2010s, the United States faced 119 billion-dollar disasters, with an average of 11.9 disasters per year (Smith, 2020). These disasters totaled roughly over $802 billion and claimed over 5,200 lives across the decade. Even after considering inflation, our nation has experienced almost double the number of billion-dollar disasters in the 2010s compared to the previous decade with 59 events. Results also show that each U.S. state was affected by a climate disaster (Howell & Elliot, 2019). More specifically, hurricanes have caused the most significant damage and fatalities than other events (Smith, 2020).

Federal agencies, scientists, and scholars have taken note of the worrisome trends developing in relation to climate change with increasing events of weather and climate disasters across the nation (Homeland Security, 2012; FEMA, 2021a; U.S.; NOAA, 2021; GFDL, 2021; NASA, 2021; Davis, 2020). To help address these concerns, in October 2018, the DRRA was signed into law to foster a culture of preparedness, to prepare the nation for devastating disasters, and to decrease the complexity of FEMA (DRRA, Division D of P.L. 115-254; DRRA, 2019). The DRRA directs FEMA to reserve up to 6 percent from post-disaster grant funding and support pre-disaster hazard mitigation through the BRIC program (FEMA, 2021b; FEMA, 2020a). Through the BRIC program, local communities, federally recognized tribes, and U.S. territories are encouraged to take proactive mitigation measures to decrease risk and improve resiliency.

The Purpose of the Report

Improve mitigation efforts by addressing equity in emergency management. To achieve this we:

- Define vulnerability
- Identify the types of organizations that are engaging marginalized groups, and how
- Reveal barriers to community recovery and federal investment

Emerging evidence suggests federal aid for mitigation has disproportionate impacts on disadvantaged groups and under-resourced neighborhoods. Recent studies indicate that communities that received financial support from FEMA experienced growth in wealth inequality (Howell & Elliot, 2019) and household debt (Billings, Gallagher & Ricketts, 2019). For example, Howell and Elliot (2019) showed that Blacks living in communities with $10 billion in damages lost roughly $27,000 whereas their White counterparts gained about $126,000. Even when accounting for similar local hazard damage, wealth disparities between racial groups increased faster in counties that received more support from FEMA.

As climate disasters become more prevalent, researchers predict that the nation will face greater loss and more financial burdens (Smith, 2020), especially for the socially marginalized communities that are more susceptible to climate disasters (Eriksen et al., 2020; Versey, 2021; Kelman, 2016; Arora, 2020; Baker & Cormier, 2015; Burke et al., 2012; Gaynor & Wilson, 2020; Hamideh & Rongerude 2018; SAMHSA, 2017; Tierney, 2014).

To prevent further disparities from climate disasters amongst low-income communities and communities of color, federal agencies, such as FEMA, are interested in equitably supporting neighborhoods. A research team funded through the Coastal Resilience Center, a DHS Center of Excellence led by The University of North Carolina at Chapel Hill in partnership with Jackson State University, assessed equity in emergency management from January 2021 to June 2021.

The purpose of this report will be to improve mitigation efforts by addressing equity in emergency management. The team focused on the following three goals to achieve this task: (1) define vulnerability through an equity lens, (2) identify how any type of organizations are engaging marginalized populations as they prepare for and recover from a natural disaster, and (3) reveal barriers to community resiliency and federal investment that raise inequities in socially marginalized communities. Ultimately, the results of this study will help guide and strengthen national policy for federal organizations like FEMA, NOAA, and others as they address justice through hazard mitigation.

This report will also include the following research topics for analysis:

1. Identify disaster resilience needs of different types of disadvantaged groups.
2. Identify the types of organizations that are engaging marginalized groups on disaster mitigation and resilience, and how.
3. Reveal barriers to community resilience and federal investment under the BRIC program to meet needs.
4. Propose policy strategies to increase federal investment effectiveness in increasing resiliency and reducing risk for disadvantaged populations.
5. Identify future research to improve how mitigation assistance programs influence disadvantaged populations' capacity to be more resilient.

Lastly, socially marginalized communities are at a greater risk of being impacted by natural hazards due to structural racism. This report will provide copious amounts of evidence to support this statement through our use of historical documents, relevant research, and archival

Socially marginalized communities are at greater risk of being impacted by natural hazards due to structural racism.

documents. Our findings reveal that the history of policies, rules, and aid programs disproportionately affect disadvantaged groups of people by race and socioeconomic status. Before we start, it is imperative to address vulnerability and explain why we choose not to use the term in this report.

Defining vulnerability and why we are not using it

In natural hazards literature, marginalized people are often titled vulnerable. Vulnerability is most generally described as exposure to risk or the propensity to be adversely affected by a natural hazard (Noy, 2018). However, measures of vulnerability in natural hazards literature do not traditionally consider historical (e.g., slavery) or social factors (i.e., disproportionate recovery times). Social vulnerability accounts for how socioeconomic characteristics of a group

factor into the likelihood of experiencing exacerbated effects of a natural hazard (Berke et al., 2019; Cutter, 2003; Gaynor, 2020; Reid, 2013). In this vein, vulnerabilities precede disasters, contribute to their severity, impede effective disaster response, and continue after the event (Enarson, 2012; Hamideh & Rongerude, 2018; Reid, 2013). Social vulnerability is produced through institutional structures such as laws, rules, and policies and ultimately provides less aid to traditionally disadvantaged populations.

Still, the discussion surrounding the term *vulnerable* suggests a static state – it does not consider changes in the type of exposure and risk over time (Derakhshan, Hodgson & Cutter, 2020; McKinzie, 2017). Also, the term does not expose how marginalized groups are considered vulnerable, especially across their separate identities (McKinzie, 2017). Vulnerability discourse also suggests that *vulnerability* and its associated characteristics (e.g., Black, Indigenous and People of Color, low socioeconomic status, and disability) are immutable character traits, which they are not. We also recognize that the term *victim* is sometimes associated with vulnerability disaster aid discourse, particularly by donor organizations and the media. Like vulnerability, *victim* conveys powerlessness that requires saving by donors rather than people with abilities.

The term has legacies within development and disability literature as denoting people who are not typical, in short, who are othered (Gartrell, 2020; Stough et al., 2016). We define othering as a process in which an individual or group of people are deemed outsiders and are treated as deviant. Vulnerability also denotes weakness, a lack of agency, passivity, and an inability to do for themselves (Stough et al., 2016). These discourses detract from the processes that *create* vulnerability within groups, therefore not only severing any possibility of intervention within these marginalizing processes but ignoring the ways in which these groups enact their power.

Researchers Marino and Faas (2020) argued that labeling someone as at risk or vulnerable creates a colonialist power structure. The one who receives support is identified as the victim in need of a savior. Vulnerability reiterates problematic westernized culture dynamics and oppresses those who do not fit in Eurocentric normative spaces. The authors asserted, “Labeling communities that suffer the burdens of history as ‘vulnerable’ in effect compounds these historical burdens” (p.5). In short, using such discourse only worsens the problem and forces individuals to be more disenfranchised.

We strongly suggest the use of socially marginalized or historically disadvantaged instead of vulnerable, particularly when used to address a group of people…

Vulnerability is a homogenous term which “flattens” and “simplifies” a group’s diverse ways of being in the world (Marino & Faas, 2020, p.33). As a result, vulnerability discourse also homogenizes solutions. A one-size-fits-all approach for support and recovery is likely to be ineffective (Malin & Ryder, 2018; Miller et al., 2013). Due to this practice, we strongly suggest the use of socially marginalized or historically disadvantaged instead of vulnerable, mainly when used to address a group of people that have been oppressed by the institutions, laws, and systems. Using such terms draws attention to how certain groups were historically and socially oppressed instead of viewing them through a deficit lens.

In addition to addressing the use of the term *vulnerable*, we also provided clarity around specific terms within this report found in Figure 1. Our ultimate goals are to question and challenge normative and harmful discourse. We also understand that terminology is fluid and that these words may be outdated in the future. We hope that this report will contribute to our quest to elevate inequitable distributions of resources for socially marginalized communities.

Figure 1. Use of Key Terms

Use of Key Terms

- **American Indian and Alaskan Native (AIAN) -** encompasses persons belonging to indigenous tribes or nations in the continental U.S. and the indigenous tribes or nations of Alaska (National Congress, 2019).
- **Black -** we are choosing to use this term instead of African Americans. The term African American is nation-specific, while the term and usage of Black represent an array of communities. Black is capitalized when referring to the people and is lower-cased when describing the color (Nick, 2020)
- **Black/Indigenous/People of Color (BIPOC) -** a portfolio of non-Whites who primarily identify as Black, Indigenous, Latinx, Asian, etc. (Pérez, 2020)
- **Latinx -** we are choosing to use this term instead of Hispanic. Latinx represents individuals whose ancestry is tied to countries in Latin America, while Hispanic includes Spain and other Spanish-speaking nations. Given that our study focuses on natural hazards in the Americas, it is only appropriate to use Latinx instead of Hispanic. Instead of Latino or Latina, we use Latinx to oppose colonization and patriarchy rooted in the grammar (Bunyasi & Smith, 2019).
- **Socially marginalized or underrepresented populations -** we are choosing to use this term in place of vulnerability. Vulnerability is not a person; therefore, we will not use it as such (Marino & Faas, 2020). For a full definition of socially marginalized or underrepresented populations, refer to Section I under Findings.
- **White** - We capitalize white when referring to the people. This group represents those with a majority of European American ancestry and who do not also identify as people of color. We choose not to use Caucasian since this term has roots in scientific racism where terms like Negroid and Mongoloid were used to describe people of color (Bunyasi & Smith, 2019).
- **Whiteness** - a social construct that maintains Eurocentric ideals, practices, and culture as superior to other racial/ethnic groups. In short, the construct of whiteness upholds racism (Hughes et al., 2016).

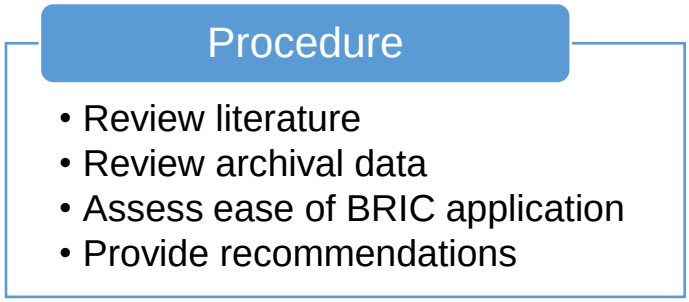
METHODS

The team applied Critical Race Theory (CRT) as our lens to address gaps related to hazards, disaster management, and mitigation efforts. One of CRT's foundational tenants is that racism is embedded within our nation's policies. Structural racism perpetuates cycles of winners and losers based on race and not merit (Delgado & Stefancic, 1995; Ladson-Billings, 2010; Ladson-Billings, Tate & Tate, 1995; Bell, 2004). Additionally, CRT stems from the notion that whiteness oppresses and marginalizes individuals identified as the other. CRT theorists define whiteness as the dominant and normative culture within the United States, stemming from White, male, Christian principles. Most notable is that everything outside of whiteness is deemed deviant and ridiculed as subservient to the norm (Harris, 1993; Hughes et al., 2016). Othering maintains a distinction between insiders and outsiders, where marginalized groups are perceived as the outcasts. CRT also calls for the use and magnification of counternarratives (Delgado & Stefancic, 1995). These stories give power to marginalized groups through exploring their perspectives.

Using CRT as our equity lens allows us to highlight discrepancies found within and across disaster management by (1) acknowledging that racism has led to the disenfranchisement of marginalized groups receiving support to face and recover from natural disasters and (2) highlighting counter-storytelling of underrepresented groups before, during, and following an event. For a further description of how we used CRT to inform our methods, see Figure 2.

Procedure

The team followed four aspects of research to address equity in disaster management. In the first stage, the team reviewed relevant literature. Next, the team collected archival data from nationwide supportive agencies. Then, the team presented how underrepresented groups, and programs that support them, face barriers. Thereafter, we reviewed the application process for hazard mitigation support through the BRIC program. Lastly, we provided policy recommendations based on the compiled results.



In the first strategy, the team reviewed over 250 peer-reviewed articles, books, government documents, policy briefs, and websites that document the past and present experiences of marginalized communities. We placed notes for each document in a database where we identified its connection to natural hazards, the groups of marginalization that were addressed (e.g., race, education, language, etc.), overall findings, missing items or barriers, resources allocated, and aspects of engagement.

In the second strategy, the team reviewed 95 organizations that focused on meeting the needs of marginalized communities before, during, or after a natural hazard. Organizations represented all 10 FEMA regions across 38 states and one U.S. territory. The team used the following strategies to identify and select programs: (1) conducted Google searches, (2) reviewed non-profit databases, (3) identified partnerships, (4) accessed written sources, (5) studied social media, and

(6) discussed with program administrators when clarity was needed. A further description of the process for identifying programs can be found in Appendix A.

In the third strategy, the team reviewed the BRIC grant program's application process, including the Non-Financial Direct Technical Assistance process to assess any unintended gaps in resource allocation created by the BRIC program. Using the CRT framework, we reviewed all BRIC documents and provided insight on its effectiveness in meeting future respondents' needs.

In the fourth strategy, we provide preliminary recommendations at the end of sections I (*Disaster Resiliency Needs for Disadvantaged Groups*), II (*Supporting Organizations*), and IIIa. (*Barriers to community resiliency*) to highlight the ways in which our findings can inform the BRIC program and hazard mitigation decisions specifically for marginalized groups.

The final strategy represents a culmination of the findings from all four strategies. The team's policy recommendations and future research were based on the extensive review of the literature, archival data, and the BRIC application process.

Validity checks

During the data collection and analysis process, we reached out to experts to ensure the content was valid. Individuals represented various academic disciplines in Anthropology, Economics, Education, Environment, Geography, History, Political Science, Public Policy, Sociology, and Urban Planning. The following represents a list of questions we asked the scholars.

- Which terms are appropriate and do not come from a deficit-based perspective?
- Can you provide a list of suggested readings?
- Whom, if anyone, are we excluding?

The team also connected with individuals who held roles in emergency management at FEMA and NOAA. The following is a list of questions we asked the experts.

- Is there a particular topic of interest that we missed or did not include in our summary?
- Can you provide a link to the government documents that we should review?
- How can we ensure that our results meet your immediate and long-term needs?

Lastly, the team assembled an informal committee of experts with significant experience in research and practice in marginalized communities to serve as final advisors to the content. Committee members reviewed the draft version and provided insight on areas to adjust, improve, add, or remove. The advisory committee is as follows: Norma Anderson, Founder of the William Averette Anderson Fund; John T. Cooper, Jr., Assistant Vice President of Public Partnership & Outreach at Texas A&M University; and Sherick Hughes, Professor, Founder and Co-Director, Graduate Certificate in Qualitative Studies in the School of Education at the University of North Carolina at Chapel Hill.

Given our extensive data collection, analysis procedures, and validity checks with expert scholars, the authors of this report feel confident that the contents are based on historical

artifacts, relevant research, and years of experience supporting underrepresented groups and emergency management.

In the next section, we use CRT as our equity lens to address vulnerability, resiliency, and the needs of disadvantaged groups before, during, and following a natural event. Additionally, we present the findings on supporting organizations and barriers to community resiliency and federal investment.

Figure 2. Using CRT as our Equity Lens

Using CRT as Our Lens

Review of relevant literature – we reviewed historical policies and documents that are known to have contributed to communities of color being disenfranchised and forced to live in spaces more susceptible to natural hazards to further understand the long-term impact of systemic racism. We also reviewed relevant research that identifies marginalized populations and presents how environmental events impacted them.

Selection of programs – we selected programs from across the nation that target marginalized populations before, during, and after a natural hazard.

Review of BRIC application process – we reviewed the BRIC grant program application process and forms, including the non-financial Direct Technical Assistant process to determine whom, if anyone, is left out from receiving assistance. By using a CRT lens, we can identify the unintended gaps formed by the application and forms.

Use of terms – we selected terms that highlight and uplift underrepresented groups instead of those used in a deficit-based manner.

Discussions with experts – we spoke with scholars of color and with scholars from underrepresented groups whose research primarily focuses on the intersections of race, justice, and equity.

Discussions with Advisory Committee – similar to our discussions with experts, advisory committee members identify as scholars of color and work in spaces related to race, justice, equity, and education.

Construction of policy recommendations – policy recommendations were based on a culmination of literature reviews, archival documents, review of BRIC applications, and consultation with experts and the advisory committee.

FINDINGS

I. Disaster Resiliency Needs for Disadvantaged Groups

In this section, we identify the history of structural racism as it relates to property ownership, removal, and destruction for communities of color. We also address the impact of continual racism as a driving force to facing repeated natural disasters with limited resources. Additionally, we identify marginalized groups within the United States and describe their connections with each other and to natural disasters. Lastly, we include preliminary recommendations directly related to hazard mitigation at the end of Section I.

Structural racism

As indicated in the introduction, we are purposefully detaching the term vulnerability as a noun. We argue that disadvantaged communities are more prone to being disproportionately impacted by natural events due to systemic racism. Structural racism is situated around ensuring that one privileged group receives property, and the other is denied access. Our research shows that within the United States, Black, Indigenous, and People of Color (BIPOC) were either deemed as property, removed from their property, or were given access to low-valued property (Copeland, 2013; Hanley-López, 2006; Rothstein, 2017).

The justification of the transatlantic slave trade stems from anti-Black racism and the belief that African bodies were not human but property (Gates, 2019). An estimated 12.5 million Africans traveled across the Atlantic, where 10.5 million survived the grueling journey (Postma, 2003; Voyages, 2012). Our nation's past shows that Blacks, and other people of color, were legally deemed as property (Hanley-López, 2006; Harris, 1993), from the first arrival of an African slave to Florida in 1528 (Gates, 2017) until the passing of the Thirteenth Amendment in 1865 (U.S. Const. amend. XIII). Ladson-Billings (2010) argued that in the United States, slaves were neither White nor owned land but were erected as property.

Our nation also has a history of removing indigenous people from their land. The Indian Removal Act of 1830 forcibly drove thousands of Native Americans that lived east of the Mississippi River to the west (4 Stat. 411). President Jackson signed roughly 70 treaties that removed about 50,000 AIAN from their property (Office of the Historian, 2016). About 50 years later, the Dawes Severalty Act of 1887 gave the U.S. government power to appropriate 90 million acres of reservation land from AIAN and give it to settlers (National Congress, 2019). Tribes were mainly not compensated for such a massive transaction. In the U.S. Supreme Court case Tee-Hit-Ton Indians v. the United States (348 U.S. 272 1955), the outcome gave the federal government the legal right to seize land from AIAN unless it was recognized by treaty or statute. Land owned by AIAN were not deemed as such without legal documents certifying their indigenous ownership (Singer, 1991).

Sadly, the concentrations of BIPOC communities created opportunities for White supremacy to remove neighborhoods of color overtly, violently, and at times legally. In 1898, a mob of White vigilantes in Wilmington, North Carolina, burned down the Black-owned newspaper, murdered 100 Blacks, and drove thousands of Black residents from their homes (Yarborough, 1998). Roughly 1,400 Blacks left the city altogether nearly a month after the revolt. In 1921, another mob of White individuals entered Tulsa, Oklahoma's Greenwood neighborhood and wiped out

about 35 city blocks of the community, also known as Black Wall Street (Messer et al., 2018). Here, the mob burned down Black-owned businesses, destroyed hundreds of Black-owned homes, and massacred roughly 300 Black residents while ultimately removing millions of dollars of generational wealth for an entire community. Toward the middle of the 20th century, the federally directed urban renewal projects devasted over 800 Black communities nationwide by removing Black-owned homes and businesses and replacing them with multi-lane highways for White commuters (U.S. Advisory Commission, 1964; Davis, 2013). Urban renewal programs were destined for "clearing and rebuilding slums, rehabilitating deteriorating areas, and conserving basically good neighborhoods" (U.S. Advisory Commission, 1964, p. 68).

"Many of those who yet remain will no doubt within a short period become sensible that the course recommended is the only one which promises stability or improvement, and it is to be hoped that all of them will realize this truth and unite with their brethren beyond the Mississippi."

-President Andrew Jackson on his message regarding the Indian Removal (1832)

Additionally, agencies made decisions that further restricted BIPOC from owning property or giving them access to low-quality land (e.g., land prone to flooding, downstream pollution, drought). President Roosevelt signed The Servicemen's Readjustment Act of 1944, commonly known as the G.I. Bill, to support returning veterans after World War II (PL 346 Chapter 268). The law provided veterans financial support to purchase homes and attend post-secondary education; however, it did not provide language that specifically addressed soldiers of color (McCardle, 2017). Unfortunately, this lack of clarity allowed banks to continue prohibiting veterans of color from using the bill to purchase homes.

In addition to restrictions for service members owning property based on race, the Federal Housing Administration (FHA) sponsored the Home Owners Loan Corporation (HOLC), which created similar restrictions for people of color (Bunyasi & Smith, 2019; Solomon, Maxwell, & Castro, 2019; Rothstein, 2017). The HOLC established maps that assessed the risk of purchasing property and highlighted communities of color as threatening property values. The corporation used coloring tactics to determine who could live in designated communities and provided mortgages to those groups. The best areas were deemed green and were designated for the "American Business and Professional Men" (Bunyasi & Smith, 2019, p.26). HOLC identified the worst areas, which were situated near environmentally hazardous spaces, as red and reserved them for low-income Black residents. These racist practices resulted in only 2 percent of $120 billion in FHA loans being awarded to nonwhite families between 1934 and 1962 (Solomon, Maxwell, & Castro, 2019). In a well-documented study, Whittemore (2021) showed local governments widely adopted race-based exclusionary zoning regulations. Results were consistent with the red-lined areas that further reinforced HOLC mortgage loan restrictions.

The impact of structural racism today

Our nation has a history of systemically denying people of color access to property based on their racial identity. Even today, BIPOC are less likely to own their homes than White households (Solomon, Maxwell & Castro, 2019; Choi et al., 2019; Darity et al., 2018). Choi and colleagues (2019) analyzed data from the American Community Survey and determined that the homeowner gap between Black and White households has expanded to some of its largest levels in the past 50 years. The gap increased from 28.1 percent in 2010 to 30.2 in 2017. Additionally, the homeownership rates for Blacks (41.8 percent) and Latinx (47.3 percent) households were significantly lower than White households (71.9 percent).

Darity and colleagues (2018) crafted a report that addressed the myths on racial gaps and wealth inequities. Their findings showed that, on average, a Black household with a college-educated head has less wealth ($70,219) than a White family whose head did not obtain a high school diploma ($82,968). White unemployed heads of households have a higher net worth than Black heads of household working full-time. Essentially, the authors argued that meritocracy is not possible for families of color and they stated, "Studying hard and working hard is not enough for Black families to make up for their marginalized financial position" (Darity et al., 2018, p.8).

Darity and colleagues (2018) also argued that the net worth of White homeowners is roughly 31 times more than Black homeowners, and that Whites have almost $140,000 more in net worth than their Black peers. They concluded that homeownership and wealth are correlated but not causal, stating, “Without sufficient wealth in the first place, households have limited means to invest” (p.14).

Scholars Solomon, Maxwell, and Castro (2019) discovered that the difference in homeownership is even present when controlling for education, age, income, region, marital status, and state. Their work showed that households of color are more likely to live near hazardous facilities than their White peers. At the same time, Pindus and colleagues (2017) found significant inequities in reliable utilities in the home of AIAN families across 38 tribal areas. Interview findings from 1,340 AIAN families suggested that respondents experienced higher rates of plumbing, heating, and electrical issues in their households than non-AIAN U.S. residents.

The unfortunate consequence of stifled opportunities for homeownership has allowed communities of color to receive limited and, at times, insufficient resources in proximity to their neighborhoods, particularly around schooling, food, and health (Quick & Kahlenberg, 2019; Brown & Walk, 2004). Researchers Solomon and colleagues (2019) stated, "Racial segregation has contributed to persistent disparities in access to public goods - such as parks, hospitals, streetlights, and well-maintained roads - and has undermined wealth building in communities of color nationwide" (p.10).

Racially segregated communities allowed for opportunity gaps between students of color and their White peers (Reardon & Owens, 2014; NYU Metro, 2018; Erickson, 2012). Today, students of color are projected to have fewer resources than White students (Hussar et al., 2020; NYU Metro, 2018). Research also indicates that Black and Brown students are more likely to attend crowded schools, have less access to higher levels of science and math, and are taught by

teachers with lower experience and qualifications than their White peers (NYU Metro, 2018; Adamson & Darling-Hammond, 2012).

In addition to gaps in access to quality schooling, communities of color also face gaps in accessing quality food. *Food insecurity* is defined as "household-level economic and social conditions of limited or uncertain access to adequate food" (USDA, 2020, para 13). Similarly, a food desert is a region where communities have inadequate access to affordable and healthy food options. Low-income households and communities of color are more likely to be food insecure and live in a food desert than their White, wealthier peers (Odoms-Young, 2019; Dutko, Ver Ploeg & Farrigan, 2012; Coleman-Jensen et al., 2017). Berke and colleagues (2018) collected data from 154 Black households in South Carolina regarding the connection between racism and food security. They found that food insecurity was related to a lifetime of racial discrimination for Black residents, and to combat food security, one should consider external factors such as racism.

Scholars have also addressed the limited access communities of color have to health treatments and trauma centers (Kreitzer et al., 2021; Tung et al., 2019). A *trauma desert* is defined as a neighborhood in an urban community at least five miles away from a trauma care facility. Tung and colleagues (2019) investigated the location of trauma centers in communities of color in Chicago, Los Angeles, and New York City. Findings revealed that Black communities were the only racial group in a trauma desert and did not have consistent access to medical centers.

Research suggests that households of color have little to no generational wealth, making mobility through social classes unattainable (Choi et al., 2019; Darity et al., 2018). The U.S. Census Bureau (Semega et al., 2021) defined the 2019 poverty threshold as a family with two adults and one child making a household income of $20,578. Accordingly, in 2019, the nation's average of people in families below poverty fell at 8.5 percent, with families that identified as White alone, not Latinx (4.9 percent), and Asian alone (5.5 percent) as households above average (U.S. Census, 2020). The data also showed above average results for Black (17.0 percent) and Latinx (14.4 percent) households.

A study by Choi and colleagues (2019) revealed that the median household income for Blacks ($38,183) was lower when compared to White families ($61,636) in 2017. The authors concluded that reducing the income gap would decrease the Black and White homeownership gap by nine percent, proving that income is not enough to balance property ownership across racial groups. Equally crucial in homeownership is one's FICO score. Results showed that over 50 percent of White households have a FICO score above 700 compared to only 20.6 percent of Black households.

Marginalization and disasters

A natural hazard event exacerbates pre-existing conditions that likely create economic growth for one privileged group and debilitates the other (Kates et al., 2006). Since 2000, natural hazards have caused significant property damage in roughly 99.7 percent of all U.S. counties (Howell & Elliot, 2019). Researchers have warned that climate change and extreme events are more likely to occur (NOAA, 2021; Davis, 2020), which will likely create significant challenges for marginalized and underrepresented groups in the future (Crosweller & Tschakert, 2020).

A study conducted by Howell and Elliot (2019) found that as local damages from hazards increased, so did wealth inequality, particularly by race, education, and homeownership. Blacks living in communities with $10 billion in damages lost roughly $27,000, whereas their White counterparts gained roughly $126,000. As hazard damages increased, high school dropouts gained less wealth. Homeowners' wealth increased with local hazard damages, but the opposite occurred for those who rented. The authors stated, "Inequalities of the past not only play forward to influence those of the present and future, they also link with historical inequalities of race that concentrate in space as well as time" (Howell & Elliot, 2019, p. 450).

Property owners have greater access to resources that support them to recover from a natural hazard than their low-income peers. These supports represent federal recovery investments, low-interest loans, buy-outs from insurance companies, and resources from family. On the contrary, an event could trigger financial uncertainty for low-income households where individuals may lose a job, be forced to move, pay higher rental fees, and likely make withdrawals from their inadequate savings.

"When it thunders and lightnin' and the wind begins to blow…there's thousands of people…aint' got no place to go."

-Bessie Smith from Back Water Blues recounts the flooding of the Cumberland River

History provides us with examples of how marginalized communities were more susceptible to natural hazards. Newly freed slaves purchased a plot of land, initially known as Freedom Hill, situated on swampy and marshy land adjacent to the Tar River in eastern North Carolina (Mizelle, 2016). White supremacy forced Black residents to occupy an area more prone to flooding and tropical storms, leaving generations to fend against countless weather-related events. Over a hundred-year period, the Tar River flooded a minimum of seven times - 1865, 1889, 1919, 1924, 1940, and 1958 (Cooper, 2019). Black residents lost their homes, heirlooms, pets, and supplies.

Another example can be found in the thousands of Chinese immigrants who perished in the Great 1906 San Francisco Earthquake. Historical data suggests that their demise was due to their confined, uninhabitable, and segregated living spaces at the city's center (Lu, 2010). Chinese immigrants were not considered citizens and were not included in the death toll, but scholars have estimated that about 4,000 succumbed to the earthquake (Goyette, 2019).

Who is mainly impacted by a natural hazard, and how?

Natural hazards impact everyone. However, disasters do not. While a natural hazard can impact everyone equally, the exposure to the event, the long-term impact of the event, and its longstanding effects vary greatly depending on sociohistorical and economic factors (Marino & Faas, 2020). According to our literature review, BIPOC, the elderly, children, women, and those in poverty are the most negatively impacted by disasters. Due to histories of violence and contemporary systems of oppression (e.g., racism, xenophobia, sexism, and agism), these groups

face additional social stressors that leave them with an increased exposure to risk and greater likelihood of suffering from natural hazard events (Jacobs, 2019; Marino & Faas, 2020; Malin & Ryder, 2018; Miller et al., 2013).

The conditions and characteristics below describe the socially marginalized and disadvantaged groups who are most impacted by natural hazards:

Black, Indigenous and People of Color (BIPOC) communities. Communities that suffer from structural racism are groups that are hit hardest by natural hazards (Arora, 2020; Baker & Cormier, 2015; Burke et al., 2012; Gaynor & Wilson, 2020; Hamideh & Rongerude, 2018; Harlan et al., 2016; Jacobs, 2019; Luft, 2016; Reid, 2013; Rodriguez-Díaz & Lewellen-Williams, 2020; Versey, 2021). Not only do individuals suffer, but areas with larger proportions of BIPOC communities suffer a more significant loss in the aftermath of disasters (Derakhshan et al., 2020; Tierney, 2019). In Puerto Rico, after hurricanes Irma and Maria, both racism and colonialism were perceived as barriers to the proper response and dispersal of national and international aid (Rodriguez-Díaz & Lewellen-Williams, 2020). Interview findings revealed that respondents felt their racialized identities and Puerto Rico's complicated connections to colonialism with the United States, created obstacles that prevented adequate response. Similarly, Black residents in the South reported greater difficulty obtaining FEMA assistance after Hurricanes Florence and Matthew (Sturgis, 2018). The reason cited is due to their properties not meeting FEMA assistance standards. BIPOC are also more likely to be gravely injured or killed during a natural disaster (Brunkard et al., 2008; Castle & Engberg, 2011). For instance, during Hurricane Katrina, the death toll for Black residents in New Orleans is estimated to be between 1.7 and four times higher than the death toll for White residents (Brunkard et al., 2008). COVID-19 is another example of racism creating and exacerbating vulnerabilities:

> "...racism exposes structures, policies, and practices that have created social vulnerability. Consequently, these vulnerabilities have interacted with the effects of COVID-19 in such a way that has led to disproportionate infection and death rates of Black people in the United States. Because of high-level vulnerabilities in many Black communities, the pathogen of racism carries COVID-19 in such a way that it permeates every aspect of Black life" (Gaynor & Wilson, 2020, p.832).

Children. Research shows that children are more likely to deal with post-traumatic stress following a disaster than adults (Peek, 2008; Neria et al., 2008; Osofsky et al., 2009). Studies also show that children may face longer recovery times and be negatively impacted by the event months to years later (La Greca et al., 1996; Ceyhan & Ceyhan, 2007; Ward & Shelley, 2008). In a study that looked at the long-term effect of families relocating after Hurricane Katrina, authors Hansel et al. (2013) found that timing impacted trauma symptoms. Older children who moved away after the storm and younger children who momentarily relocated experienced heightened trauma symptoms compared to their peers.

Recent work on the impact of Hurricanes Florence and Matthew showed that repeated events disrupted students' academic performance (Fuller & Davis, 2021), attendance, and behavior (Davis et al., 2021). Findings also revealed that the consecutive storms interrupted students' overall schooling experience. In another study, authors Baker and Cormier (2015) argued that

disasters tend to "disrupt social networks that are pivotal to child and adolescent development" (p.71).

Living conditions. Natural hazards also impact groups with uncertain or less than stable housing conditions (Bathi & Das, 2016; Gaillard et al., 2019; Tierney, 2014; Hamideh & Rongerude, 2018; Harlan et al., 2016). Homelessness is most obviously exemplary of this category, though those living in mobile homes and those renting were also amongst the most disadvantaged groups in our review. Homeless people are often politically neglected, left with no legitimate or legal ability to claim rights to access resources available for others in society (Gaillard et al., 2019). Mobile homes are more susceptible to storm surges and flood damage (Bathi & Das, 2016). Renters are vulnerable to a lack of housing stock after a natural hazard makes theirs unlivable (Méndez et al., 2020). Méndez and colleagues also showed that poor living conditions are associated to disparities in health insurance and a lack of familiarity with the local health care system.

Low-socioeconomic status. Those lacking the economic capital to cover damages to their homes, cars, and other such property are left without critical items in the aftermath of natural hazards (Baker & Cormier, 2015; Bathi & Das, 2016; SAMHSA, 2017; Tierney, 2014). While White, wealthy people may lose more property or have a higher monetary value of economic and material losses, the losses sustained by the poor are relatively far more devastating (Bathi & Das, 2016; De Silva, 2018). Less affluent areas are often not given the same ecological amenities that buffer natural hazards like floods. For instance, these spaces tend to have fewer trees, lawns, and parks (Harlan et al., 2006; Bunyasi & Smith, 2019). Additionally, individuals in low-income communities are less likely to benefit from recovery resources compared to their advantaged peers, creating another barrier for resiliency (Hamideh & Rongerude, 2018).

Women. Women are particularly disadvantaged before, during, and after a natural hazard (Arora, 2020; Enarson, 2012; Gartrell et al., 2020; Jacobs, 2019; Mckinzie, 2017; Reinhardt, 2019; Versey, 2021). Studies showed that women, on average, were more likely to be responsible for childcare as compared to their male peers (Peek & Fothergill, 2008; Reid, 2013). Women may also hold a position that necessitates them to remain on-site and work during an event, thus not giving them the ability to prepare (Reid, 2013). Llorente-Marrón and colleagues (2020) noted that in Haiti, after a major earthquake in 2010, households with women as the head faced different realities and challenges in both pre- and post-disaster compared to their male peers who identified as the head of their households. Results showed that the earthquake widened their social vulnerability due to gender inequalities. Scholar Enarson (2012) argued that more research should focus on women and emergency management given the disproportionate impact of events, and that such actions would benefit all. Enarson stated, "Understanding more about how women in the United States anticipate, prepare for, cope with, resist, and recover from disasters does not detract from our capacity for positive action on the global stage, but amplifies it" (2010, p.197).

Other characteristics that arose less frequently in our review but are nonetheless essential to consider are:

Ability. Recovery is hindered when disaster recovery services do not accommodate differently-abled persons (Stough, 2016). The author argued that one's disability status enhances the difficulties individuals experience as they negotiate the recovery process by facing additional obstacles for obtaining resources to assist with their disabilities. Gartrell and colleagues (2020) argued that there is a lack of reliable, disaggregated data on identifying needs for the disability community after a disaster. Without this data, it is difficult to make policies for these groups to assist with mitigation or better understand their experiences in the aftermath of a natural hazard. The lack of baseline data and clear disability-inclusive disaster risk reduction directives makes accountability difficult and the measurement of goal achievement for this group impossible.

Immigrant/Undocumented. Nguyen and Salvesen (2014) found language, literacy, and communication as the main barriers to recovery for Southeastern Asian immigrant populations located in Alabama. Findings also revealed cultural differences and a helplessness around navigating emergency management bureaucracy. In a study conducted in Eastern North Carolina, Latinx migrants were less likely to have preparedness plans in place for an emergency (Burke et al., 2012). Most could read or knew English enough and struggled to evacuate during the last hurricane. According to another study, Latinx migrants and renters had higher exposure to pollutants like nitrous oxide, carbon monoxide, and ozone after a disaster (Tierney, 2014). Latinx families depended on their families and other social networks to gain information, access resources, and make decisions (Hilfiner et al., 2012). Grabovschi and colleagues (2013) also argued that "immigrant status is an important vulnerability aspect that often co-exists and may synergistically interact with other recognized factors involved in health care disparities," especially following disasters (pg. 9).

Occupational proximity. Those in occupations directly related to or in proximity to the natural disaster also suffer unique and disproportionate impacts after an event. For example, following the Thomas Fires in California, farmworkers suffered poor air quality acutely due to their occupation (Méndez et al., 2020). This study also found that vulnerability-mapping falls short to account for the comprehensive negative impacts of a region:

> "Toxic smoke flows down from burning mountainsides, settling in densely populated valleys below and threatening outdoor workers. Lavish hillside mansions are destroyed or evacuated, leaving low-wage immigrant gardeners, housekeepers, and caregivers unemployed. Tourism throughout the region shuts down, putting thousands of hospitality sector employees out of work. From the loss of housing and infrastructure to the closure of schools and job sites, multiple regions are impacted beyond the census tracts identified in vulnerability mapping models and landscape risk maps" (Méndez et al., 2020, p. 57).

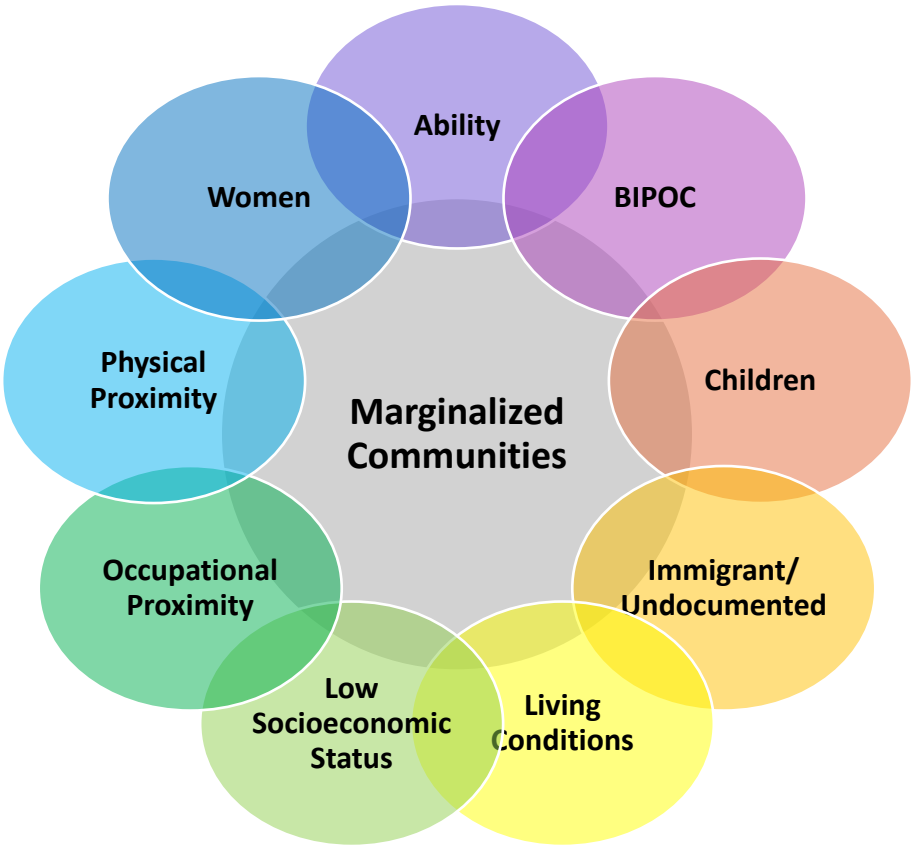
Physical proximity. One of the most prominent measures of vulnerability to a natural hazard is concerning the individuals' or groups' physical proximity to the risk (Bathi & Das, 2016; Chang et al., 2018, Tierney, 2014). It makes sense that those closest to the hazard would most likely be impacted severely by the hazards themselves. However, where groups are located is often not coincidental but rather aligns with sociohistorical, geographical practices. For example, the *levee effect* is the notion that levees increase flood losses due to developers building houses in flood pathways once levees are built (Tierney, 2014). Newly built houses in flood pathways increase the likelihood for flood losses rather than decrease the likelihood, despite the levee's presence.

A note on intersectionality

Intersectionality, a term coined by Kimberlé Crenshaw in 1989, describes the ways in which a person's social identities combine to create various forms of privilege and discrimination (Crenshaw, 1989). The factors mentioned above are the most prominent and intersect for many communities and groups (Arora, 2020; Jacobs, 2019; Luft, 2016; Mckinzie, 2017; Reinhardt, 2019; Ryder, 2017; Versey, 2021). Intersectionality illustrates the ways societal structures of marginalization overlap and create unique modes of discrimination on one end of the spectrum, and privilege on the other (Crenshaw, 1989). As noted in Mckinzie's (2017) work on perceptions of racial inequality following tornadoes in Alabama, "…thinking about inequality as static or additive misses the mark." For example, one study in our review recommended comprehensive plans for low-income, older populations with less education who faced a natural disaster (Lieberman-Cribbin et al., 2020). Their results showed that this intersection was disproportionately exposed to flooding compared to their higher-income peers with more education.

Often, systems of racism, sexism, and agism are operating at once and impact a person's proximity to risk, both figuratively and literally. Marginalization is all of these things, is constantly changing for any given person or group, and is impacted (and many times, defined) by the fallout from these social systems of oppression. Therefore, it is essential to understand the previous characteristics and conditions as proxies for larger societal forces at work that create vulnerabilities even before a natural hazard's presence.

Figure 3. Who are Most Impacted by Natural Hazards?



Using a mitigation lens to review Section I. Disaster Resiliency Needs for Disadvantaged Groups

Studies show that marginalized groups may not have the privilege (Debastiani et al., 2015; Blake et al., 2017), access (Burke et al., 2012; Klaiman et al., 2010), or awareness (Horney et al., 2013) to take mitigation actions for future natural disasters. Research on how organizations can best tailor disaster mitigation to marginalized populations is limited but reveals several vital patterns. In some instances, low-income BIPOC communities cannot address mitigation since they are still responding to the after-effects of generations of structural racism and repeated natural disasters. It may seem impractical to plan for future events when individuals are still living in environments that are actively recovering from past and repeated storms. The following list represents preliminary policy recommendations pulled from Section I to support mitigation efforts for the BRIC program.

- Further research to assess the extent to which mitigation is used within socially marginalized communities. An array of literature addresses disaster mitigation for various populations nationwide. Limited research focuses targeting hazard mitigation for marginalized groups. Examples of potential questions are, *what types of non-financial supports could help marginalized communities better plan for future disasters?* Or, *who needs to be involved in providing appropriate mitigation supports for marginalized populations?*
- The BRIC program could provide multiple communication mechanisms for marginalized communities to access information related to the program and application. We define access as gaining information from resources and communication. We address these forms of access further in Section II.
- The BRIC program could include multiple mitigation strategies to reach marginalized communities. Doing so ensures the inclusion of various groups of marginalized populations. In Section I, we provided examples of such groups impacted by natural disasters. The BRIC program could review demographic materials of former and current applicants to determine which group, if any, is missing. Once missing groups are identified, the BRIC program could seek to find out why differences are present and create a targeted mechanism to reach those who were not applying.

II. Supporting Organizations

In this section, we provide a summary of the types of organizations that are providing support to marginalized communities before, during, and after an event. Additionally, we share information from 95 programs nationwide that specifically target marginalized groups when tailoring to their needs. Although not all citations or programs focus on mitigation, we identify the lessons learned from across groups and provide preliminary recommendations directly related to mitigation at the end of Section II.

What does the literature say on how organizations are meeting communal needs?

Overall, findings show that four sources primarily provide support for communities affected by natural disasters:

(1) Community members
(2) Investigators and researchers
(3) Local public organizations
(4) Non-profit & faith-based organizations

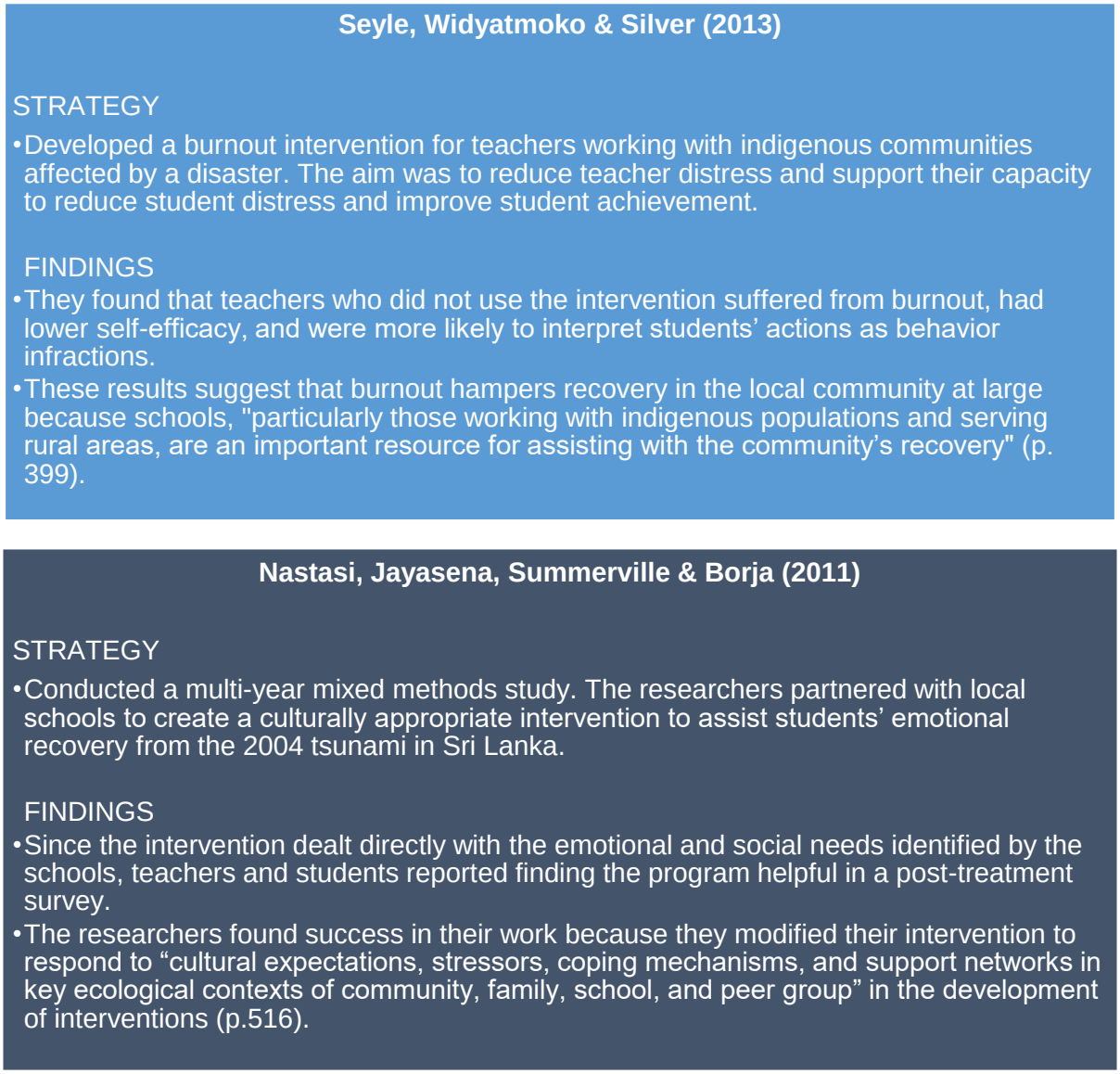
Community members offer grassroots local support during recovery, providing relationships and social bonds with family, friends, and neighbors (Dyregrov et al., 2015). These bonds are often strengthened during difficult times (Caldwell & Boyd, 2009; Aldrich, 2012). Disaster affects both the physical and social environments, leading people to lean on each other (Erikson, 1976). Often, this is not a matter of choice but a matter of necessity, as most natural hazards occur in under-resourced or developing regions - places where disaster mitigation efforts have not been made - forcing people to rely on their social networks for coping resources (Ekanayake et al., 2013). Moreover, an individual's ability to cope with a disaster is not a fixed or stable trait but depends on the context of the disaster. As Lee et al. (2020) explained:

> "People's capacity for mobilizing resources for resilience varies…Some participants more actively overcame crisis, like when dealing with paperwork and having their house raised, than others who struggled to adapt. In this sense, resilience is not a stable trait, but involves proficiencies, behaviors, and situational contexts that help one be aware of what resources are available and then coordinate and mobilize those resources" (p.450).

In contrast, a study conducted by Aldrich (2012) showed that social capital was the dominant force driving the post-disaster recovery. Aldrich argued that social capital could produce positive results but also negative consequences. In particular, social capital bonding has been used to isolate groups by race, class, and ethnicity by preventing low-income communities of color the ability to recover from natural disasters.

Investigators and researchers. Our literature review also showed that researchers have developed and implemented numerous instruments and interventions to support communities affected by disasters. These range from physical and infrastructure interventions to psychological and emotional supports. Figure 4 presents examples of the latter and were used in socially marginalized communities affected by disasters:

Figure 4. Strategies for Supporting Communities



Local governments. Such organizations often spearhead both pre-disaster mitigation efforts and post-disaster resiliency efforts in their communities. Local agencies can make long-term improvements to communities with steady and reliable resources coming from the federal level (Akbaba-Altun, 2005). Long-term improvements for communities may include disaster-proofing buildings, rebuilding, and improving economic quality of life. Unfortunately, such opportunities are rare. Most local governments are limited by resources and the ability to mitigate and manage disasters (Kusuari & Alam, 2011). Such constraints may represent human resources, policies for effective applications, technical support, financial aid, and trained leaders. Meyer et al. (2018) found that many city planners struggled to identify cost-effective, efficient ways to assess damage and plan for rebuilding after a disaster.

Another support that local governments provide is through professional development trainings on recovery and mitigation in preparation for the next disaster (Akbaba-Altun, 2005; Konakli, 2019; McKen, 2001; Ozmen, 2006). Frankenberg and colleagues (2013) recommended that local governments consider the public needs of those they serve when addressing resiliency over time. Results suggested that individuals with more education recovered faster after a tsunami than those with less education. Fuller (2014) uncovered that natural hazards negatively impacted student's math achievement across 13 years. Given the consistent re-occurrence of natural hazards, Fuller recommended that local governments create mitigation planning that incorporates the needs of schools and their students. Together, these findings suggest that both local governments and their residents may benefit from factors like their education, income, language, and other potential marginalizations (Frankenberg et al., 2013; Fuller, 2014).

Schools, a more grassroots, ad hoc level, also serve in disaster preparation and response. Research from Shaw and colleagues (2011) revealed that disaster education could help children respond appropriately to events and show them how to protect themselves during an emergency. For instance, schools that implement pre-disaster drills are seen to help lower children's anxiety around events (Kusumari & Alam, 2011; Mutch, 2015b). Once a disaster occurs, schools often become central cities for disaster management and recovery. In some cases, schools may serve as emergency shelters for residents who need to evacuate their homes and surrounding areas (Davis et al., 2021). Schools often manage donations from outside organizations and distribute clothing, food, and supplies (Davis et al., 2021; Goswick et al., 2018; Gouwens, 2008).

For schools to meet community and students' needs during disasters, the buildings themselves must be structurally solid to withstand the physical toll of a disaster. However, 53 percent of school-aged children in the U.S. attend school in buildings that the American Society of Civil Engineers considers in need of significant improvements to reach acceptable condition (American Society of Civil Engineers, 2017). Despite this reality, the spending gap between what is needed to structurally strengthen school buildings and the actual amount invested in school infrastructure widens every year, despite the increasing frequency of catastrophic natural disasters due to global climate change (Peek, 2018). Federally-funded support to improve school infrastructure is both a safety issue and an equity one. Schools in lower-income areas are forced to spend more significant proportions of their operating budgets on emergency repairs than their higher-wealth counterparts (Filardo, Gutter, & Rowland, 2016).

Non-profits and faith-based organizations. Non-governmental organizations (NGOs) serve a critical role in meeting the needs of marginalized populations. The literature described that these organizations from within and outside an affected community could support disaster resiliency.

Larger and non-local organizations may encounter many of the common barriers to entry, including mistrust or skepticism from within the community (Findholt, 2013; Fuhrmann, 2011; Hafley & Tewksbury, 1995; McKnight & Chervany, 2001; Berke et al., 2011). Moreover, many smaller organizations are limited by their administrative capability, limiting their ability to apply for and receive federal funding (Lazarevski et al., 2017). Meyer et al. (2019) noted that local non-profit representatives felt insufficiently trained and knowledgeable to provide disaster recovery support. Locals often perceived political motivations rather than genuine altruism or a higher purpose as driving outside support (Hall 1977; Osborne, 1989). This lack of trust has

historical roots in how BIPOC and rural residents have been treated and marginalized by outside operatives. An example of this occurred after Hurricane Camille, a Category 5 hurricane that struck the Gulf Coast in the 1960s. Outside agencies failed to intervene and ameliorate on-the-ground challenges experienced by locals, leaving residents to navigate and manage recovery alone (Beaver et al., 2005).

Pre-storm conditions, such as socioeconomic status, resources, family background, and social supports, are significant predictors of whether an individual will be able to successfully recover after a natural disaster (Fothergill & Peek, 2015). Non-profits located in remote areas can support members living in rural communities in ways that larger organizations cannot. Rural areas often have higher rates of poverty, food insecurity, unemployment, and high school dropouts than urban areas (Economic Research Service, 2018; Hu et al., 2003; Koricich et al., 2018; Provasnik et al., 2007). In many regions, these challenges have persisted for decades (Elder & Conger, 2014) and are even more pronounced for communities of color (Hu et al., 2003; Koricich et al., 2018; Provasnik et al., 2007).

Faith-based organizations in rural areas may also have greater success in working with disaster-affected communities since religion is often a crucial part of the identity and social culture in the community (Lewicka, 2011; Stewart & Abbott- Chapman, 2011). Rural residents may be more receptive to efforts from faith-based organizations, as they share a common core identity. For example, in the rural American South, Christianity is especially salient in the rural Southeast, where residents report the highest rates of religiosity in the U.S.

Natural disasters serve only to exacerbate these socioeconomic differences, as rural areas can struggle harder and longer to recover. At the same time, socioeconomically-advantaged communities have greater social capital—a measure of the value of resources, knowledge, and networks. Whereas socioeconomically disadvantaged communities, like those in rural areas, have less. Social capital is an essential predictor of disaster recovery (Tierney, 2019).

To get a sense of how NGOs nationwide meet marginalized communities' needs, the team compiled data from 95 organizations that target and support underrepresented groups before, during, and after a natural hazard. The subsequent section provides an analysis of the non-profit and faith-based organizations and identifies commonalities across programs.

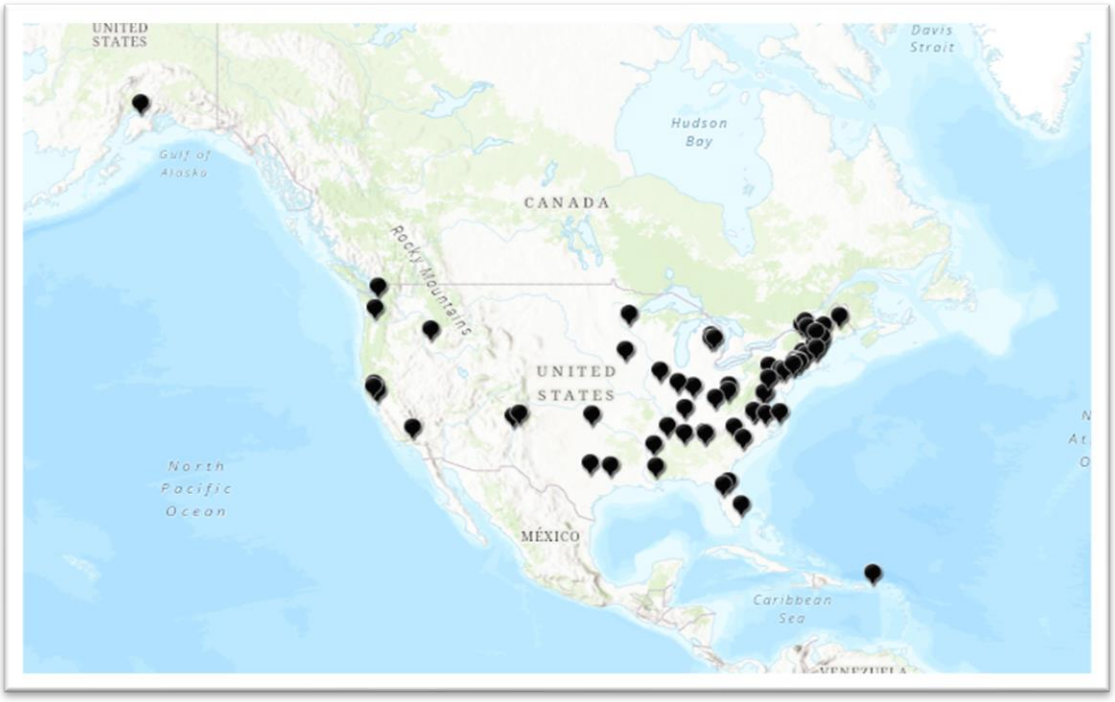
How are non-profit and faith-based organizations meeting communal needs based on the archival review?

This general summary identifies the key trends found in the archival review of 95 programs located across all FEMA regions. The team determined to not disclose the list due to the sensitivity of site information. We assert that it is more important to build a bridge with marginalized communities and create a reciprocal conversation, than to expose the workings of sites, which could produce more harm than benefit. Instead, we included an image that shows the location of the 95 sites (Figure 5) and provided a summary of the significant themes pulled from publicly available data that address how these organizations meet the communal need. Additionally, the team identified six organizations to provide a deeper analysis of programs that are meeting communal needs. See Appendix B for a list of de-identified selected programs.

A note on mitigation. Overall, only two organizations explicitly mentioned providing mitigation efforts to community members in preparation for the next event. These organizations offered spiritual and emotional counseling, job training, resumé support, and career counseling. Additionally, they provided professional development on disaster mitigation and emergency response to local leaders such as school principals and church leaders. More organizations may have a preparedness focus since we could only speak with representations from 30 sites.

Roughly 19 of 95 organizations (20.0 percent) provided resiliency services instead of solely providing immediate relief. These organizations were often local long-term recovery groups working with town officials and FEMA. Many identified as social service organizations whose assistance was needed during and after disasters to support the recovery of populations. Since many of these disaster-relief programs were nested within small and local-based organizations, they seemed to have a relatively small footprint outside of the communities they served.

Figure 5. Locations of 95 disaster aid organizations



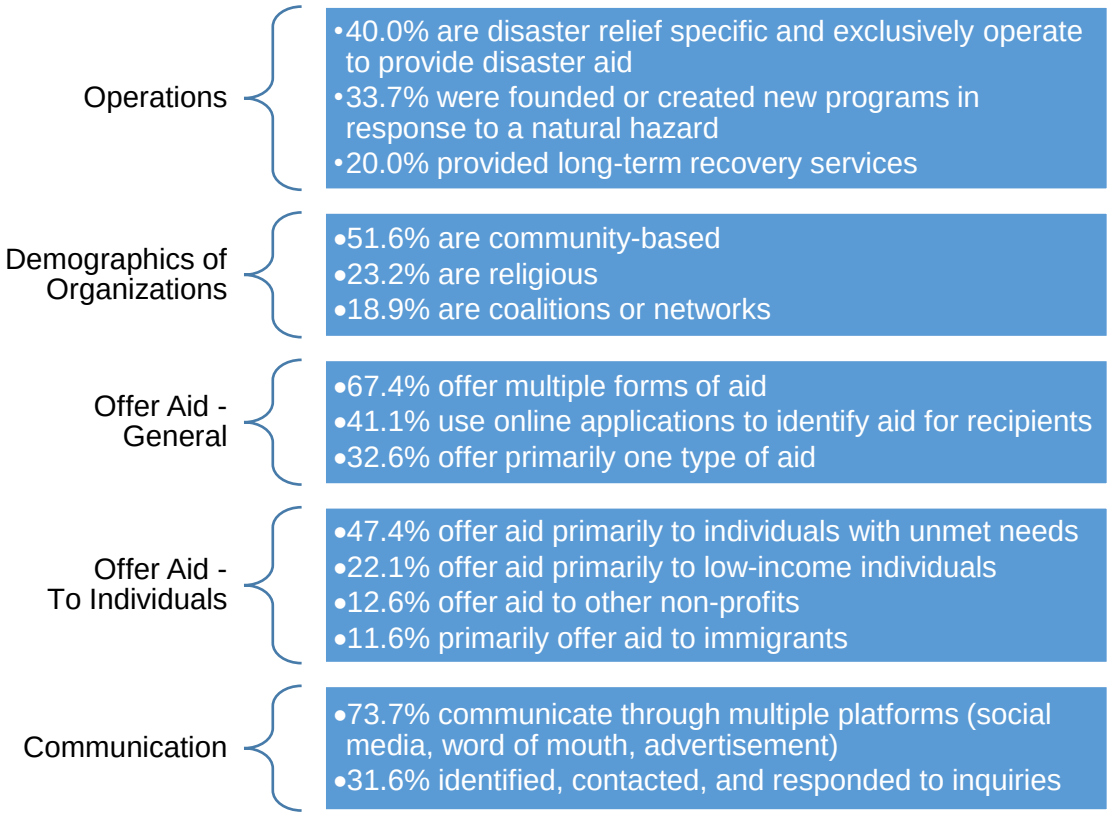
Broad trends. Approximately one-third of the organizations identified started immediately following a disaster. At the same time, pre-existing nationally recognized non-profits acted more as support networks. Successful programs emphasized the importance of maintaining strong relationships within the community when providing aid.

Of the 19 organizations that provided long-term aid to underserved communities, the community-based programs saw greater success compared to the national organizations since they provided more personal connections with community members. Larger organizations tended to not follow up with their aid recipients as they were responsible for providing support on

national scales. In contrast, community-based organizations that specialized in immediate services maintained strong relationships with those they served.

Figure 6 identifies commonalities across the 95 sites, with specific attention to organized operations, demographics, strategies that offered financial support, aid recipients, and communication.

Figure 6. Major themes from archival data (N=95)



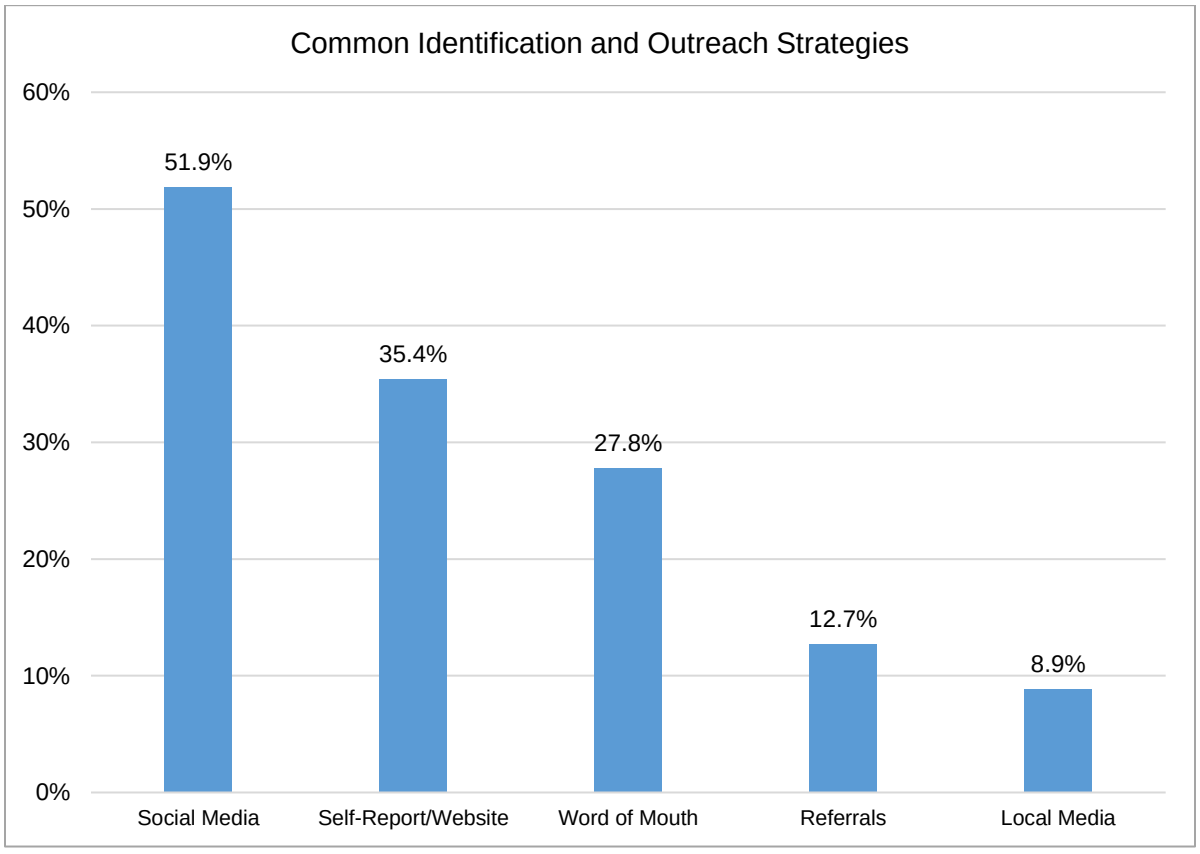
Communication. We found significant variation in how organizations used communication to collect information from individuals in need. Seventy organizations (73.7 percent) did not rely solely on one specific method to identify aid recipients. A common form of identification was the reliance on online applications to identify aid recipients. This allowed for a streamlined approach and provided organizations with more discretion to provide aid. Additional methods frequently used were social media, websites, newsletters, advertisements, word-of-mouth, and recipient databases. Other less common methods included podcasts, WhatsApp groups, radio shows, and going door-to-door.

Door-to-door efforts and other face-to-face approaches to communicate may be particularly useful in rural areas and places where broadband internet access is less reliable. As Kelley and Sisneros (2020) reported, there are several intersectional barriers that limit internet access in general, and those factors often arise during disasters and unforeseen disruptions to normal

operations. Freeman and Hancock (2015) added that implementing reliable broadband in rural areas is crucial to their survival.

Figure 7 provides information on the methods organizations across 79 sites used to reach underrepresented communities who faced a natural hazard. The most common methods used were social media, self-reported via websites, and word of mouth.

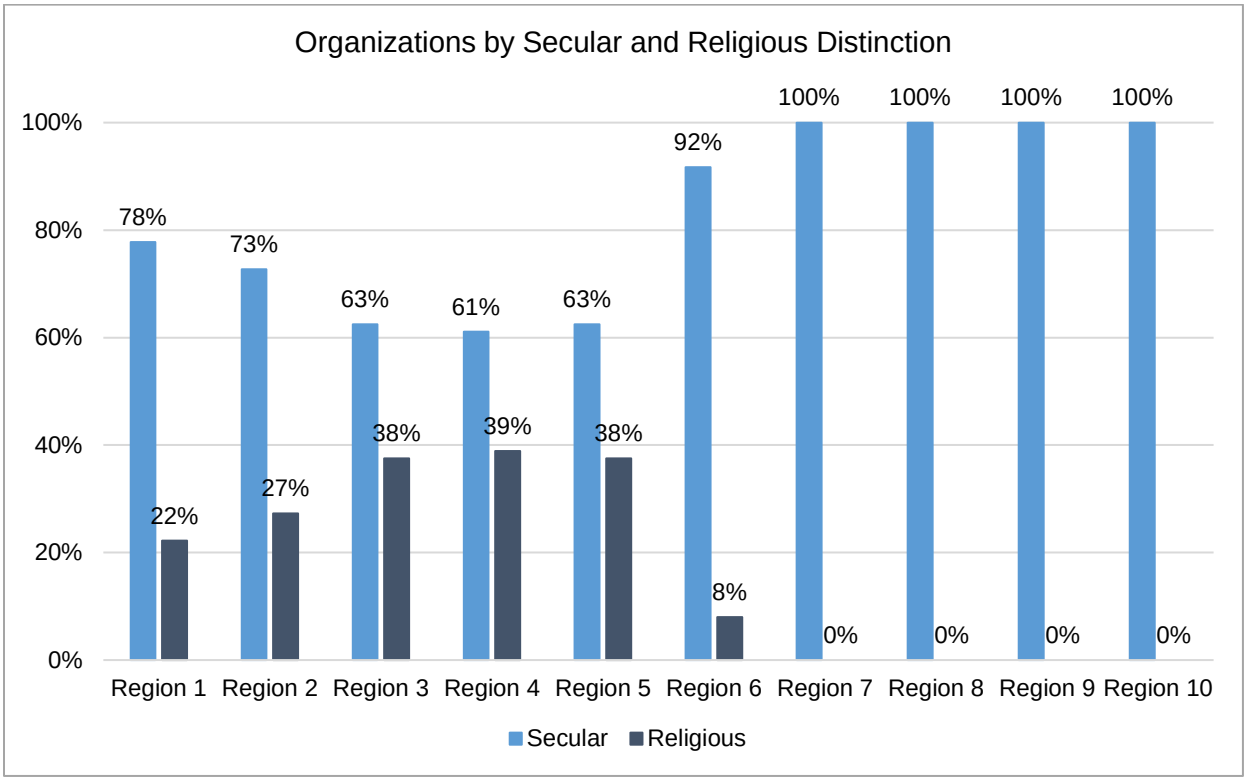
Figure 7. Methods organizations used to outreach (N=79)



Demographics of Organizations. Eighty-nine organizations (93.7 percent) that provided aid to under-served populations are community- or county-specific. Findings showed that programs felt it necessary to understand the communities they served and provide resources to those in need. Nearly one-fourth of the organizations were religious or faith-based. Although a relatively limited number of network and coalition programs currently exist and were identified within this meta-analysis, these organizations possessed highly effective strategies to support under-served communities. Coalitions often consisted of several community-based organizations that allowed them to provide comprehensive and targeted services on a broader scale.

Figure 8 provides a breakdown of organizations by FEMA Region to illustrate the difference in location of faith-based organizations versus secular institutions. Most (N=60, 75.9 percent) natural hazard relief organizations identified as civil organizations, between 22 percent and 39 percent of organizations in Regions 1-5 represented faith-based organizations.

Figure 8. Organizations based on status (N=95)



Offer Aid – General. Sixty-four organizations (67.4 percent) that provided disaster relief were not highly specialized in emergency management but offered an array of services. The adaptable nature of these organizations increased the likelihood of equitable aid distribution. Although single-service providers were also instrumental in providing disaster aid, they were limited by their resources. Many organizations lacked the infrastructure to refer potential aid recipients to other organizations that may help them.

Overall, organizations provided three primary services to residents:(1) Housing, (2) Emergency Financial Aid, and (3) Other Personal Services. *Housing services* were defined as temporary and permanent housing, home repair and reconstruction, home inspection, and certification reports. We identified *Emergency Financial Aid* as basic needs and supplies, assistance with utility bills, medical supplies, unrestricted and restricted cash flow, assistance with managing insurance claims, and FEMA aid. Lastly, *Other Personal Services* looked to mental health, translation support, case management, and legal services.

Offer Aid – To Individuals. Twenty-one organizations (22.1 percent) provided aid primarily to low-income individuals. However, organizations that did not explicitly state their intent also considered income a factor when selecting aid recipients. Additionally, we found limited information on organizations that supported immigrant populations. Eleven organizations provided aid primarily to immigrants while six organizations targeted their services to indigenous populations. Most organizations provided aid to individuals with unmet needs, indicating that they did not have targeted populations providing aid to and operated more generally.

Using a mitigation lens to review Section II. Supporting Organizations

Our findings from the literature and archival review showed that social networks, investigators, local organizations, and NGOs primarily provide support to marginalized communities before, during, and after a natural disaster. We found limited information on mitigation efforts for marginalized communities. We were able to use examples from organizations on response and recovery to address mitigation. The following list represents preliminary policy recommendations pulled from Section II to support mitigation efforts for the BRIC program.

- Schools are often the spaces where community members face a natural disaster. Students, educators, and their families look to schools to assist them as they recover from an event. The BRIC program could collaborate with the U.S. Department of Education – Disaster Recovery Unit and schools to enhance mitigation efforts at the local level, specifically in low-income communities of color. Research shows that pre-disaster drills that are not used as scare tactics can reduce children's anxiety about the event. The BRIC program could also connect schools with resources to create local hazard mitigation plans or find funding toward improving building structures.
- The BRIC program could provide opportunities for NGOs to receive support such as professional development trainings, connecting NGOs to experts in mitigation, and assistance with funding. The BRIC program could also rely on NGOs to maintain relationships with multiple and varying groups of marginalized populations nationwide. NGOs can connect with marginalized communities in ways that local, state, and federal governments cannot do. They have established relationships and trust with community members but may not be trained in how to provide mitigation strategies.
- The BRIC program could use multiple platforms such as social media, websites, word of mouth, referrals, and local media as methods to distribute information on the program. Organizations that experienced the most success connected with marginalized communities through multiple platforms. NGOs situated in marginalized communities should play a more significant role in expanding ways to deliver information. The BRIC program could work with local governments and NGO communities to deliver information to residents.

III. Barriers to Community Resiliency & Federal Investment

In this last section, we provide a summary of barriers to community resiliency based on obstacles marginalized populations and organizations working to support them, encounter. We use research from our literature and archival review to identify potential obstructions. Similar to previous sections, our work includes citations from research that addresses mitigation and recovery. We pull from these sources to share preliminary recommendations that directly connect to mitigation and can be found at the end of Section IIIa. Subsequently, we include an analysis of the BRIC program to identify the barriers to federal investment. Here, we address both the BRIC program and the non-financial Direct Technical Assistance (DTA) initiative.

Barriers to community resiliency

What are the barriers marginalized communities face?

As mentioned earlier, natural hazards are experienced by many, but are more likely to become disasters since they exacerbate socioeconomic and political challenges experienced by marginalized groups. As global climate change and social inequality continue to worsen, so will the effects of these disasters. Sociologist Kathleen Tierney (2019) predicts:

> "Disaster-related losses in the form of death, injury, illness, and economic costs will continue to rise. These effects will be borne disproportionately by the poor countries of the world and by the most vulnerable groups, in both developed and less developed countries…Disasters will interact with other social ills, such as wars and civil wars to produced severe humanitarian crises" (p. 127-8).

As this quote explains, marginalized communities often have insufficient resources to address individuals' social and economic needs (Konakli & Pinar, 2019; Kusumasari & Alam, 2011). Given the preexisting challenges for these populations, resiliency is difficult to attain since recovery is often marked by uneasy communication and slow return to normal operations (Doerfel et al., 2010). When a disaster occurs, marginalized groups report relying on their resources (Ekanayake et al., 2013) and social networks (Erikson, 1976) to navigate recovery. Local leaders feel a sense of necessity to support their communities and spearhead efforts toward reopening and returning to normalcy (Akbar, 2005; Fletcher & Nicholas, 2016; McKen, 2001; Mutch, 2015a; O'Connor et al., 2013; Ozmen, 2006).

The following list provides several barriers to resiliency that marginalized communities face before, during, and after a natural hazard occurs:

Lack of representation or inclusion. Socially marginalized groups are often politically marginalized or ignored. For instance, differently-abled persons are rarely included in traditional disaster resiliency planning (Gartrell et al., 2020). More recently, there have been a few accounts of disability-inclusive disaster risk reduction (DIDRR) taken on by emergency planners and managers both internationally and domestically (Pertiwi et al., 2019; Ronoh et al., 2016; Spurway & Griffiths, 2016; Villeneuve, 2018; Villeneuve, 2021). For example, in Australia, multiple participatory research projects enabled emergency managers (in government and non-governmental organizations), those with disabilities, and community providers to create strategies for DIDRR (Villeneuve, 2021). These strategies were used to create and enact change.

They are as follows: shifting towards person-centered emergency planning, making incremental changes in practice, utilizing multi-stakeholder engagement, and partnering with a disability-focused organization. Partnering with a disability-focused organization was critical for creating and enacting this change and allowed for an integration of grassroots innovation into emergency plans.

Lack of stable housing. Without stable housing, people are unable to establish or return to familiar routines for their families. This includes going back to work and providing a safe space for children to attend school. A lack of housing contributes significantly to a slow-down in recovery at the family and community level (Gaillard et al., 2019; Peacock et al., 1997; Peacock et al., 2018) and prevents people from planning for future disasters. Renters, especially low-income renters, face additional difficulties regarding stable housing. For example, after Hurricane Katrina, renters in New Orleans faced a lack of available rental property, discriminatory rental procedures, and an air of hostility regarding renters' rights that made it challenging to move back into their neighborhoods or surrounding areas (Rodriguez-Dod & Duhart, 2006). Another study from Peacock and colleagues (1997) highlighted unjust consequences across race, ethnicity, and class and found disparities in receiving federal aid for housing recovery. With decreased accessibility to essential social services such as public transportation and employment locations, communities struggled to recover after an event. Another study by Logan and colleagues (2016) described the *segmented withdrawal* which is defined as a form of fragmented resilience where marginalized populations were less likely to move out as compared to their more advantaged peers. Findings showed that marginalized populations had fewer choices given their instable living conditions. Our early findings showed that a lack of stability in housing is deeply rooted in structural racism that BIPOC communities continue to face. More specifically, without stability, maintaining generational wealth is unrealistic and ultimately perpetuates the cycle of volatility.

Limited communication. Studies cite language and cultural barriers, a digital divide in access to information for underrepresented groups (Lucas et al., 2003; Siddiqui et al., 2009; Wu et al., 2005; Davis et al., 2010). Poor communication strategies (e.g., excessive jargon) can exclude and marginalize already underrepresented populations (Lee et al., 2020). Research shows that communication strategies for marginalized groups should utilize the ways these individuals already receive information. For instance, after Hurricane Katrina, Latinx families were more likely to use their social networks to gather information about resources (Hilfiner et al., 2012). Unfortunately, traditional emergency response communication strategies did not prioritize these pathways and were unable to effectively communicate with groups in need.

Structural/Systemic Racism. Racism is perceived as a barrier to proper response in the aftermath of a disaster (Rodriguez-Díaz & Lewellen-Williams, 2020). Scholars Rodriguez-Díaz & Lewellen-Williams stipulated that structural racism fueled the chaotic aftermath of Hurricane Maria in Puerto Rico. Through frustration, residents created an opportunity to assist community members of Puerto Rico following one of the deadliest storms in the island's history. The authors argued, "Community philanthropy is inhibited by structural constraints—such as racism—and can be enabled and enhanced by the provision of resources by governments, authorities, and organizations" (p. 236).

What are the barriers supportive agencies face in reaching marginalized groups?
For public agencies and non-profits looking to engage with socially marginalized and disaster-affected populations, there are several considerations these organizations must address before they work with these communities. The following list provides several barriers to resiliency that programs supporting marginalized communities face before, during, and after a natural hazard occurs:

Inequitable resource distribution. A barrier to interventions for vulnerable groups is when an intervention is not equitably distributed or not designed with equity. For instance, when the Recovery School District (RSD) in Louisiana replaced underperforming public schools with charter schools after Hurricane Katrina, several gaps in the design exacerbated inequalities. Buras (2011) found that since independent schools in New Orleans had the power to choose where they could locate, better schools chose to situate themselves in more advantaged neighborhoods. As a result, the school system in New Orleans became a tiered system in which students of color were sorted into lower quality and lower performing schools (The Institute on Race and Poverty, 2010). Furthermore, because White, advantaged students could remain in the few public schools controlled by the school board, the RSD schools created a "separate and unequal system of schools" that left Black students to compete for scarce resources (Akers, 2012, p.29). Additionally, Jeffers (2014) found that the autonomy at RSD schools granted them discretion in disciplinary action, which often meant students with disabilities were disproportionately punished and punished more harshly.

Barriers to Resiliency

Barriers Faced by Marginalized Communities

1. Lack of representation or inclusion
2. Lack of stable housing
3. Limited communication
4. Structural/systemic racism

Barriers Faced by Organizations

1. Inequitable resource distribution
2. Lack of trust
3. Limited access to technology
4. Mental health challenges
5. Not providing appropriate supports
6. Providers are likely not culturally competent
7. The timing is late or not helpful

Although the above example relates to schooling, its findings and lessons can easily be applied in the hazard mitigation spaces. Without consciously and purposefully applying an equitable lens to ensure that BIPOC students and students with disabilities receive support to meet and excel in their academic spaces, marginalized students will be left behind. Two vital aspects of a successful intervention include leveraging the voices of local leaders in decision-making and ensuring equitable distribution of resources.

Lack of trust. The construction and implementation of disaster intervention require agencies to build trust and relationships with local participants (Brooks, 2014; Nastasi et al., 2011). They also require agencies to seek feedback on interventions from individuals and adjust accordingly (Nastasi et al., 2011). Doing so can help reduce the mistrust that often characterizes the relationship between outside agencies and populations living in a disaster-prone or disaster-affected area. Sherrieb et al. (2012) suggested leveraging local insiders' knowledge during disasters as they are the best equipped to understand the needs and capacity their community has during a natural disaster. Likewise, local leaders can provide valuable insights about on-the-ground resources and preparedness for future crises (Akbaba-Altun, 2005; Konakli & Kaplan, 2019; Ozmen, 2006). When disaster strikes or is imminent, closing this political and social distance can reduce detrimental outcomes for socially marginalized groups.

Trust is crucial to the success of outside interventions because local populations often believe outside agencies misunderstand or underestimate the severity of local challenges (Fuhrmann, 2011; Findholt, 2013). To mitigate this barrier, agencies could think long-term about the supports and interventions they could provide to groups affected by or prone to disasters (Cerqua & di Pietro, 2016; di Pietro, 2017; O'Toole, 2017; Seyle et al., 2011). It is imperative that they have clear, open communication policies and practices to be successful and build trust with the communities with whom they are engaging. Failure to do so can have disastrous consequences.

The archival data showed that a lack of trust between organizations and community members created difficulties amongst groups. First, authorities do not trust communities in their ability to express their needs. After Puerto Rico's earthquake in January 2020, one organization noticed that they were reaching more underrepresented communities when allowing communities to self-report house damages via Google Forms rather than relying on information from local authorities. Second, communities do not trust providers either because they are unwilling to admit their needs, do not want to be labeled as poor or are interacting with aid providers with incongruent cultural backgrounds. Communities are also less likely to trust providers they know will never come back to follow up with their recovery process.

Limited access to technology. Results from archival data showed an association between education, socioeconomic background, and access to technology, where households in low-income communities were less likely to access quality technology. For instance, socially marginalized communities that live in low-socioeconomic households may lack access to the internet, phone, and computer resources, limiting their ability to navigate online resources and file insurance claims. Similarly, limited access makes it difficult for community-based organizations to identify and provide support for individuals as it relates to resiliency. Additionally, senior citizens are more likely to be technologically illiterate than younger individuals, making them less likely to use and benefit from online forms that address needs.

Mental health challenges. Another barrier that emerged from the literature and the archival data focused on mental wellness and health. Long-term supports are crucial, as individuals affected by disasters often struggled for years after the event (Davis et al., 2021; Griffard et al., 2020). For instance, Ceyhan and Ceyhan (2006) found that earthquake victims reported a lower quality of life six years after exposure than individuals who did not experience the disaster. Adverse long-term outcomes from disaster exposure are especially prevalent among children. They can

experience difficulties years after the event occurs, even if they were not physically present for the event. Fuller (2014) found that prenatal exposure to a natural hazard is associated with lower test scores in third grade, especially among children of Black mothers. Similarly, Swenson and colleagues (1996) observed that preschool children whose parents experienced sudden life changes, such as marriage, death, or loss of property, were more likely to exhibit behavior problems around the time of Hurricane Hugo. Noffsinger et al. (2012) explained, "Undoubtedly, the parent-child relationship represents the most salient microsystem influence in children's lives and plays an influential role in their reactions to and recovery from disasters" (p.6).

Results from the archival documents showed that supporting agencies assisted individuals as they faced mental health challenges following a natural hazard event. Findings suggested that individuals impacted by a storm may struggle with the feeling of being abandoned after the first round of aid, stressed by displacement, lost without homes, or missing loved ones. Coupled together, marginalized communities affected by natural hazards are at a higher risk of experiencing mental health and substance abuse disorders.

Not providing appropriate supports. Schools that poorly manage disaster responses often had higher rates of burnout, turnover intentions, and attrition among teachers (Kuntz et al., 2013). As O'Toole (2018) explained, principals were vital in providing support to teachers who experienced emotional exhaustion and burnout following the Christchurch earthquake. Likewise, after Hurricane Katrina, for teachers in Mississippi, stress from the storm often manifested as increased absenteeism, burnout, and irritability (Pane et al., 2006). School leaders who were most successful in confronting these challenges did several things: (1) offered counseling and mental health support services to students and staff, (2) made sure staff were paid on time, and (3) gave students and staff opportunities to process the trauma of the storms (Lee et al., 2008). In supporting teachers, as Kuntz et al. (2013) summarized, "The onus is therefore placed on organizations to manage their job requirements and support systems available in a disaster context" (p.66).

Similarly, findings from archival records showed that organizations are learning how to provide support to undocumented immigrants after a disaster. Undocumented immigrants are ineligible for most federal and state aid programs. Even if they qualify, some are less likely to seek out those benefits due to fear of deportation, limited English proficiency, and unfamiliarity with the disaster resiliency process. Our findings show that migrant communities in Michigan were left out of the resiliency process. They were hesitant to open doors to the National Guard and other government officials during the Flint Water Crisis in fear of deportation. Similar issues have also affected migrant families in densely migrant-populated communities.

Providers are likely not culturally competent. As Barker and Cormier (2015) explained, a culturally competent intervention will: "(1) promote a sense of safety, (2) promote calming, (3) promote a sense of self and collective efficacy, (4) promote connectedness, and (5) promote hope" (p.51). Furthermore, cultural competence necessitates that agencies consider the intersectionality of an individual's identity, including disability status (Ronoh, 2017) and gender (de Volo, 2007). Importantly, agencies must not approach these identities with a deficit mentality, as socially marginalized populations sometimes report feeling "picked on" and "victimized" by outsiders (Putsche et al., 2017, p.700). These factors may all affect the efficacy

of disaster prevention or intervention measures. Agencies that do not take the cultural values and beliefs of the peoples they seek to engage, especially when designing supports, will ultimately face many barriers gaining access and trust. Without either attribute, it will hinder the success of even the most well-intentioned work.

The timing is late or not helpful. Marginalized communities are likely to believe outside agencies misunderstand or underestimate the severity of local challenges (Fuhrmann, 2011; Findholt, 2013). Ideally, these communities prefer long-term investments in infrastructure, economics, and education instead of quick fixes. The literature shows that such efforts would help prevent the devastating impacts of a disaster *before* it happens, instead of short-term fixes caused by a disaster *after* it has occurred (Fuhrman, 2011; Findholt, 2013). When it comes to timing, supportive organizations are encouraged to: (1) build relationships within marginalized communities before a disaster event, (2) invest in long-term mitigation projects, and (3) consider supports that strengthen the resiliency capacity of the community.

Using a mitigation lens to review Section IIIa. Barriers to Community Resiliency

Our findings revealed that marginalized communities, and the organizations that support them, face barriers to long-term recovery following a natural disaster. In this section, we used examples from the literature and archival review to reveal how mitigation strategies can be used to address barriers to community resiliency. The following list represents preliminary policy recommendations pulled from Section IIIa to support mitigation efforts for the BRIC program.

- Mental health support to individuals following an event during the short- and long-term is critical for marginalized communities and has implications for mitigation efforts. Continued exposure to repeated natural disasters is likely to worsen adults' and children's social and emotional health, especially those who represent marginalized communities. Mitigation efforts that center on mental health could reduce long-term effects of distress on residents, especially marginalized communities. The BRIC program could offer preferences to applications that address mental health, given the relevance around supporting marginalized communities' mental well-being and long-term care following an event. Ultimately, the BRIC program's applicants and sub-applicants could improve residents' quality of life by building mitigation strategies. Planning for mental health could meet communal wellness needs, particularly for those with limited resources.
- Building trust is vital to support marginalized communities, and without trust, organizations are unable to meet needs and build long-lasting relationships essential for effective mitigation programs. With trust, the BRIC program can enter a community and develop reciprocal relationships with community members to address mitigation strategies and meet their unique needs thoughtfully. We develop this idea further in the subsequent section entitled *Policy Recommendations*.
- Focusing on mitigation efforts can be impossible for communities who do not have a home, are not receiving equitable resources, and receive ill-timed support. Unfortunately, each of these items is a barrier for the BRIC program to address as they support marginalized communities. It is difficult for people to plan for future natural disasters without a stable home. Research also addresses the inequality in mitigation where advantaged populations can prepare for disasters and disadvantaged communities cannot. Marginalized groups may not be engaged in mitigation strategies because they are still recovering from an event from months to years earlier. Also, discussions around mitigation could be ill-timed and could appear apathetic to communities' immediate needs. The BRIC program could collaborate with marginalized communities to assess the best way to provide meaningful support while paying attention to renters, homelessness, equity around resource distribution, and ensuring the timing is appropriate to the communities' needs and schedules.

Barriers to federal investment

Using the CRT framework, the team reviewed the BRIC application and selection process to determine how marginalized communities can apply and receive support equitably. The following steps address the process for applying to BRIC (DHS, 2020):

(1) A State/Territory or Federally recognized tribe submits a BRIC application complete with cost-share information. If the applicant qualifies for the non-financial Direct Technical Assistant initiative, they can submit a letter of interest along with their formal application.
(2) A group reviews the applicant's eligibility before sending the application to the next level of review.
(3) FEMA at the regional level uses the Technical Evaluation Criteria to review and score applications. Sub-applications either receive all or no points per each criterion.
(4) The highest scoring sub-applications with up to twice the program's value move to the Qualitative Evaluation panel. The review panel encompasses volunteers from federal, state, territorial, federal tribal, and local agencies.
(5) Applicant's projects receive a cumulative score based on evaluations. Still, FEMA may select applicants based on priority (e.g., funding availability, repetition of applications, or history as a past FEMA grant recipient).
(6) FEMA distributes final deliberations to applicants – (a) Identified for Further Review, (b) Not Selected, or (c) Does Not Meet Hazard Mitigation Assistance Requirements.

The following section provides a breakdown of where equity was overlooked related to the BRIC application process.

The BRIC Application

Our first observation is that FEMA organized various individuals to ensure that community voice was involved in providing support to those in need. Our critique is that marginalized groups will undoubtedly be left out without using an equity lens – even from spaces that collect community voices. For instance, if we host an event to collect information on strategies to assist marginalized populations through mitigation and send out a blanketed invitation, we will likely have participants who think similarly and represent similar professions. Using an equity lens ensures that those who are typically left out of the discussion are involved and even centered. If for the same event, we connect with targeted groups at the beginning – ones that we have an existing relationship with and have established trust – we then can use their expertise and suggestions on how to recruit communities purposefully. The conversation is less focused on what will be discussed and more on who we collectively need to be engaged in the community conversation about mitigation.

The following prompts are areas that the research team identified as potential barriers for federal investment related to the BRIC application.

Cost-share. Each awarded sub-application is required to share the cost with a non-federal entity. The overall cost-share for the BRIC program is 75 percent federal and 25 percent non-federal. We note that communities identified as "small and impoverished" qualify for a cost-share of 90 percent federal and 10 percent non-federal (FEMA, 2020b p.2). Also, FEMA will waive non-

federal cost-share fees for insular areas such as American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands with awards below $200,000. We recognize the decrease in cost-sharing responsibility based on the economic need of communities; however, we wonder which communities are left out that do not designate as small but are impoverished.

We also question the extent of long-term supports around the mechanisms and infrastructure, including funding to maintain measures implemented by the BRIC program. Long-term assistance could be an added burden for low-income marginalized communities to bear on their own. Further research is needed to determine if cost-share unintendedly prevents extremely marginalized communities from applying to the program given short- and long-term financial responsibilities.

Lastly, we question if cost-sharing for small and low-income communities at 90/10 percent is ethical, especially if such groups are historically marginalized and acquired their land through structural racism. For instance, we mentioned that Princeville, North Carolina, is one of the nation's oldest Black towns, rejected by Whites and purchased by Blacks who gained their freedom from slavery. Unfortunately, this land is more prone to flooding, and residents face destructive and repeated hurricanes. *Is it ethical for this low-income community of color to assemble 10 percent of their proposed budget when the community was established because former slaveholders allowed Black residents to occupy a disastrous space?* We see similar examples of Black settlements nationwide, along with AIAN, Latinx, and immigrant communities.

Eligibility. The following groups are eligible to apply for the BRIC program's funding: (1) a state or territory that received a major disaster declaration under the Stafford Act or (2) a federally recognized tribe. Pointing back to our findings under the first research topic, we addressed the forcible and violent removal of indigenous communities from their land. Using a CRT lens, we question the exclusion of all AIAN Tribes located in states and U.S. territories. For instance, Hurricane Matthew created significant devastation for members of the Lumbee Tribe (a North Carolina state-recognized tribe) in 2016 (Bauerlein et al., 2016). Two years later, Hurricane Florence brought another debilitating storm to the same AIAN community (Pogrund, 2018). The Lumbee Tribe is one of the largest tribes east of the Mississippi River and within North Carolina that has a poverty rate almost double the state's rate at roughly 33 percent (Bauerlein et al., 2016). It is not our intent to use the poverty rate to create a deficient and monolithic image of the Lumbee Tribe. Instead, we strive to connect with history, land, rights, and how being denied access prevents marginalized groups from preparing for and becoming resilient to natural disasters.

Evaluating awardees. Evaluators use the Technical Evaluation Criteria to evaluate and score applicants' sub-applications. The technical criteria scoring benefits and privileges groups with institutional knowledge and wealth by awarding higher scores to those who have knowledge in infrastructure, building code requirements, and grading schedules. Also, sub-applications are given points if they received a FEMA advance assistance grant in the past. The smallest consideration, at five points, awards those who have a designation as a small and impoverished community (FEMA, 2020c). This criterion does not account for other community characteristics

that include the intersectionality of multiple types of marginalization. This criterion also leaves out communities that are impoverished in urban settings, which is another form of redlining.

Since this technical scoring system "offers incentives for elements valued by FEMA" (FEMA, 2020d, p. 20), there may also be a benefit in assigning point values for working with organizations that cater to marginalized groups at the first evaluation step as opposed to at the Qualitative Evaluation Criteria. Moving this evaluation criterion to the Technical Evaluation Criteria shows that interagency collaboration with marginalized populations is valued and provides sub-applicants more potential points. Assigning a quantified measure (in points) on the application for working with organizations that work with women, those in poverty, those that are low-English proficiency (LEP) groups, those with existing health conditions, and other areas, would demonstrate FEMA's commitment to working for and with marginalized groups and may encourage a more equitable allocation of resources and decision-making capabilities.

The Qualitative Evaluation Criteria has three criteria linked to working with or for marginalized populations (FEMA, 2020d). Within the topic *Population Impacted,* evaluators assess how applicants' projects use marginalized populations to inform project selection and design. The next topic, entitled *Outreach Activities,* evaluates the extent to which applicants leveraged planning from community partnerships. The last topic, *Leveraging Partners,* assesses the extent to which applicants are working with multiple partners. Overall, it appears that the Qualitative Evaluation Criteria is more apt for making equitable award decisions. However, each application must be scored through the technical criteria, which, as noted, privileges groups with both institutional knowledge and wealth. Additionally, volunteers from federal, state, territorial, tribal, and local agencies are evaluating each project which may represent a lack of diversity in demographics and perspectives.

Selecting awardees. Applicants will receive one of three notices from FEMA to notify them of their status – Identified for Further Review (IFFR), Not Selected, or Does Not Meet Hazard Mitigation Assistance (HMA) Requirements (DHS, 2020). We raise questions to the demographics of those who do not meet the HMA. *Is there a disproportionate number of communities from marginalized groups in this category? Are these applicants less likely to have prior relationships with FEMA and funding opportunities from federal grants?* Further research should explore the demographic breakdown of award recipients to ensure that privileged communities are not continually gaining aid while marginalized communities are not.

Timing. Our observation showed that the application would be released in September 2021 and close in January 2022. This provides applicants five months to identify an area of need, collaborate with state, territory, or tribal office, and complete an application or letter of intent. Given the short timeframe, *will five months provide underrepresented communities enough time to apply and be prepared to execute grant responsibilities*? Also, this timeline falls during the middle to end of hurricane season for the eastern, southern region of the U.S. Research from Davis and colleagues (2021) showed that rural communities impacted by Hurricane Matthew were still recovering from the event almost two years later. Marginalized communities in coastal communities face additional barriers since they are in a current state of recovery, given the amount of loss and disruption from repeated storms. It is likely difficult for marginalized

communities to respond, recover from a hurricane, and then apply for mitigation support. Local communities are likely already overburdened, especially during critical times.

Scholar Tema Okun (2021) identifies White supremacy culture (WSC) as the ideology that whiteness is superior to BIPOC culture. Okun argued that a *sense of urgency* is a mechanism of WSC. A consequence of desiring immediacy makes it difficult for agencies to be inclusive, democratic, and thoughtful regarding decision-making. Another argument against maintaining WSC would be to allow a more interactive and fluid application process with access to multiple deadlines. Having quarterly or a biannual deadline would support network growth, collective efforts, and thoughtful decision-making processes.

The BRIC Direct Technical Assistance
Under the BRIC Direct Technical Assistance, FEMA is expected to provide up to 10 selected communities with support for their mitigation efforts in increasing their resilience to the next natural hazard (FEMA, 2020a). Applicants were asked to work with their state, territorial, or Indian tribal government office and submit a letter of interest that directly benefits their communities and aligns with the goals of the BRIC program. FEMA also indicated assisting applicants with their project or specific needs to the application.

Barriers to Federal Investment

The BRIC application

1. Cost-share
2. Eligibility
3. Evaluating awardees
4. Selecting awardees
5. Timing

The BRIC Direct Technical Assistant application

1. Access to the application
2. Assessment of content
3. Evaluating awardees
4. The number of applicants

The following prompts are areas that the research team identified as potential barriers for federal investment related to the BRIC Direct Technical Assistance.

Ability to collaborate. We asked ourselves *to what extent individuals (non-profits, faith-based organizations) can come together and apply for support*? More specially, *how, if at all, does the application promote community across communities?* Okun (2021) identifies *individualism* as another mechanism of WSC in that it prevents collaboration amongst communities and promotes notions of competition over cooperation. As marginalized communities compete for support, they may see each other as competitors instead of as comrades. For instance, providing individual recognition may lead to isolation, which then fosters an environment that lacks accountability. Phrases like “we value those who do not need supervision” or “we appreciate those who can work independently” feed into a counter-communal narrative and stifle organizational improvements. A strategy against maintaining WSC would be moving toward relying more on collective voice and discovery than singular submissions.

Assessment of content. We immediately noticed that the jargon within the BRIC Direct Technical Assistant program privileges organizations already familiar with federal terminology. Unfortunately, this type of discourse is not as prevalent within grassroots community groups that are likely not exposed to the institutional knowledge from emergency management spaces. Another issue noted with the language derives from a deficit-based model. Potential applicants are identified as stakeholders who "lack" expertise or have expressed "difficulties identifying needs" (FEMA, 2020a, p.1). This tone creates a savior image that unintentionally blames marginalized groups for applying for assistance - as noted in our literature review that addressed using the term *vulnerability* as a noun. Another area to address is the clarity around the types of support given through the DTA initiative. It was unclear that this initiative is not linked to financial support given that "non-financial" was infrequently used. Another area of confusion was around the proposed structure, especially when considering that different communities represent various cultures: "FEMA expects participating communities to serve as mentors for future recipients of Direct Technical Assistance and other communities" (FEMA, 2020a, p.3).

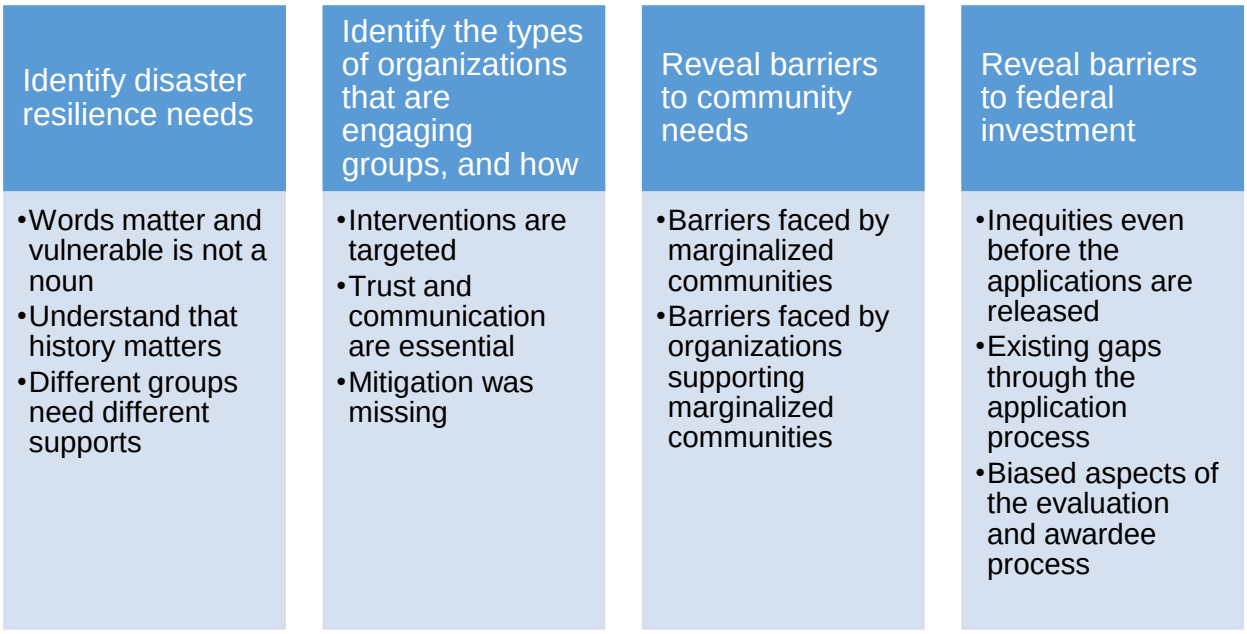
Evaluating awardees. The process of assessing selections for the Direct Technical Assistance was not clearly stated online. We asked ourselves, *how is the letter of interest considered? Who evaluates the letter?* And, *is it possible for a community to apply for both BRIC and DTA and receive support for one and not the other?*

The number of applicants. It is vital to use an equitable framework where the needs of the marginalized are the driving force around decision-making. Thinking of those who are historically and socially left behind first allows for accurate systemic adjustments. Efforts to support marginalized communities should be the center and not appear to be an afterthought. In doing so, communities are more likely to trust that an organization's actions are selfless and intentional. By awarding just ten communities, there seems to be winners and losers. This approach will serve to reinforce mistrust toward the BRIC program and FEMA, as well as provide a sense of neglect.

IV. Summary of Findings

The following section provides a summary of the overall findings from the literature and archival review. A brief overview of results can be found in Figure 9, followed by a description of each summary point.

Figure 9. Summary of Findings



1. **Identify disaster resilience needs**

Words matter and vulnerable is not a noun. We argue that the current usage of the term *vulnerability* upholds a deficit-based approach to understanding the experiences of socially and historically marginalized communities. The term is homogenous and overly simplifies group diversity and problems. We recognize that words and language matter, especially when identifying systemic racism in emergency management.

Understand that history matters. Historically, people of color were deemed property, removed from their property, or were given low-valued property, all of which were motivated by White supremacy. Federal laws permitted organizations and people to legally cast households of color into low-resourced spaces that were likely near hazardous environments. Today, systemic racism persists since people of color, on average, have little to no generational wealth and are likely residing in spaces with existing gaps in wealth, health, education, housing, and access to resources, all of which makes them more predisposed to natural disasters and less likely to recover.

Different groups need different supports. Natural disasters disproportionately impact marginalized people. According to our literature review, people of color, the elderly and very young, women, and those in poverty are the most negatively impacted by disasters.

Due to histories of violence, contemporary systems of oppression, and how these systems intersect in individuals' lives – these groups have social stressors that leave them with increased exposure to risk and greater likelihood of suffering.

2. **Identify the types of organizations that are engaging marginalized groups, and how**
Interventions are targeted. For marginalized communities affected by natural disasters, considerable support comes from within – both top-down approaches from formal organizations (e.g., local governments, schools, and churches) to bottom-up approaches from reliance on informal organizations (e.g., family, friends, and social networks). Studies showed greater success with formal organizations that used culturally appropriate interventions with communities. Archival records revealed that such program interventions provided the following short- and long-term services to residents: housing (e.g., payments), emergency financial aid (e.g., paying utilities), and other personal services (e.g., mental health services).

Trust and communication are essential. Findings from the literature review and archival records showed that trust between organizations and community members was crucial. Overwhelmingly, organizations that support intervention programs determined their ability to gain trust from reaching targeted groups is due to their physical location being situated in the community and their ability to build lasting and more personal relationships. Most trusted organizations were best able to communicate information that was valid, comprehensible, and understood by marginalized populations. Archival records showed that 70 of 85 organizations (73.7 percent) used multiple platforms to communicate with residents (e.g., social media, word of mouth, and advertisement).

Mitigation was missing. Our archival work showed that 2 of 95 organizations (2.1 percent) explicitly addressed mitigation efforts while 19 of 95 organizations (20.0 percent) provided long-term recovery services for communities in need of extended support. The remaining organizations applied short-term programs that addressed immediate needs. This discrepancy could be due to communities feeling less recovered from past events and unable to address future disasters.

3. **Reveal barriers to community resiliency**
Barriers faced by marginalized communities. Our review of the research pointed to four barriers marginalized communities face to resiliency. These include: lack of inclusion in local public mitigation and recovery policy decision making, lack of stable housing including renters and those without a home, limited communication either by not receiving information or having minimal access, and structural racism where groups are denied support to recover based on their race or ethnicity.

Barriers faced by organizations supporting marginalized communities. We identified seven barriers that programs faced when supporting socially disadvantaged groups including: lack of trust with larger organizations located outside of communities, limited access to technology that connects residents with information, unqualified providers of aid who are not culturally competent in the communities they serve, inequitable resource distribution that benefits privileged groups or does not provide appropriate supports, challenges with

mental health, and ineffective timing that does not focus on long-term mitigation and resiliency investments.

4. **Reveal barriers for federal investment under the BRIC program**
   Inequities even before the application is released. We found concerns around the timeline, cost-share agreements, and eligibility requirements upon reviewing the BRIC application process. The existing timeline for the BRIC application is between September and January. This period primarily falls during hurricane season and will likely create additional barriers for marginalized communities living in coastal communities to apply, given the frequency of storms, the repeated loss they face, and the inability to recover from previous events fully. Next, the cost-sharing agreement for *small and impoverished communities* requests a 10 percent share on projects allowing only those who have the financial support to participate, leaving out urban impoverished communities. Lastly, the eligibility does not include all marginalized groups, specifically state-recognized American Indian and Alaskan Native (AIAN) tribes.

   Existing gaps through the application process. The research team investigated how the application process, and its content, created additional barriers for marginalized groups to complete the BRIC application. We noticed difficulty in finding the application online and could not see an example of a high-quality submission. Additionally, we wondered how individuals living in rural communities or places with limited broadband access could view and submit the application. Once we found information on the application, we noticed the terminology privileged those with extensive experience in the emergency management community. Both gaining access and comprehending content create more barriers for groups with limited access to technology and education.

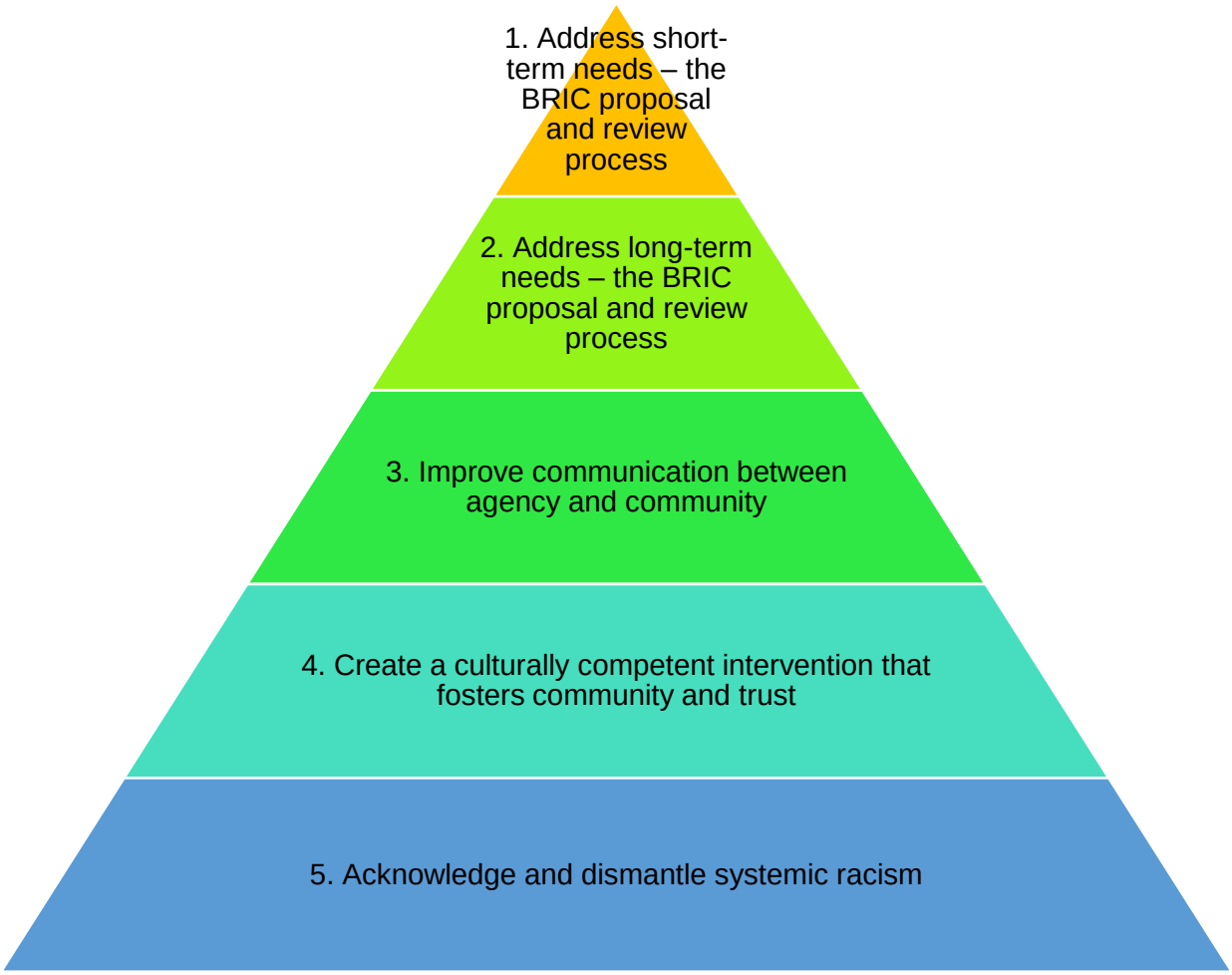
   Biased aspects of the evaluation and awardee process. The team reviewed how BRIC personnel evaluated applicants and the number of those selected for the non-financial Direct Technical Assistance (DTA). We found that the first evaluation phase, known as the Technical Evaluation Criteria, provides extra points to those awarded a FEMA grant in the past and provides the smallest point allocation to projects that work with small and impoverished communities. In this existing structure, individuals with a history of receiving federal awards that do not include marginalized communities are given higher marks than first-time federal grant appliers working on a project in an underrepresented community. In addition, the DTA initiative only allocated up to 10 applicants to receive assistance. Such a low probability of success encourages a perception of high competition that may persuade potential groups to devote their limited time elsewhere. This limitation works against the goal of the DTA initiative, which is to ensure that marginalized communities across the nation and U.S. territories have an opportunity to receive non-financial support for mitigation efforts.

POLICY RECOMMENDATIONS

Based on our literature review, review of archival data on programs that support underrepresented groups nationwide, and conversations with experts, we created the following figure to display our policy recommendations for assisting the BRIC program in providing equitable mitigation resources to socially marginalized communities. Items within the figure are ranked based on effort. This means that recommendations at the top of the pyramid will likely need less effort and time to complete when compared to items at the bottom.

The title of Figure 10 is *Repairing Community through Structural Change*. For clarity, we stipulate that the community incapsulates marginalized neighborhoods and federal agencies. We also suggest that repairing is not only through addressing structural changes but also by building relationships of trust and dismantling systemic racism.

Figure 10. Repairing Community through Structural Change



1. Address short-term needs – the BRIC proposal and review process

Table 1 summarizes each barrier and recommendations for improvement for the BRIC program and DTA.

Table 1. Recommendations for Short-term Needs

Program	Barrier	Recommendation for Improvement
BRIC	Access to the application	After reviewing the website multiple times and asking for assistance, the team connected to FEMA GO – a hazard mitigation assistance grant website where the BRIC application is housed. To reach new audiences, especially those representing marginalized communities who may have limited broadband access and who may have limited knowledge of navigating FEMA websites and grant portals, we suggest creating a clear pathway for potential applicants to locate the application. Provide a space where potential applicants can review the application regardless of whether the grant window is open or closed. This will allow potential applicants to review the document, assemble a team with community members, and collect information needed for the application during the interim. We also suggest creating an easy virtual pathway for potential applicants to view past projects and visual examples of the application. The BRIC website provides visuals that describe the overall BRIC grant process. Application requirements are likely to be straightforward for individuals working in the emergency management space; however, the language may seem confusing and overwhelming for those not versed in the discourse. Please see the following recommendation on *Assessment of content* for further discussion.
BRIC & DTA	Assessment of content	Application content should be field-tested with representatives of marginalized communities not connected to emergency management but who have been impacted by a natural disaster. Our concern was that some of the language within the application might not be clear to someone who is not connected to disaster mitigation. This would likely privilege affluent groups and hinder those who are neither connected nor have access to emergency management groups. A helpful method used to test the validity of surveys is through administering cognitive interviews to potential applicants. This process allows the evaluator to assess how potential applicants process and respond to questions. For example, the phrase "share a tale" could mean sharing a past example or telling a lie. This simple phrase could produce very different responses, hence the need for cognitive interviews to ensure that the evaluator collects

Program	Barrier	Recommendation for Improvement
		accurate and valuable information free of cultural bias. For more information about this process, please see Paul Lavrakas's (2008) work on *Cognitive Interviewing*. We suggest that the BRIC program consistently includes "non-financial" before DTA and includes a sentence that explains that DTA does not provide financial support to selectees. The team also needed clarity on the "non-financial" support from DTA. Confusion emerged when one of the examples of support selectees could receive focused on grant funding.
BRIC	Cost-share	We noted that using the phrase *small and impoverished* to designate the percentage of cost-share applicable does not account for communities that are impoverished but located in urban settings. Our recommendation is to remove "small" and open the category up to all low-income communities regardless of population density. We also suggest additional research on the unintended consequences and barriers created by using a cost-share for low-income marginalized communities. It is possible that cost-sharing prohibits groups from applying to the BRIC program and that these groups could be the most in need of support.
BRIC & DTA	Identifying BRIC awardees and DTA selections	We note that the BRIC program uses volunteers from the community to select awardees. However, *community members* are likely individuals who are connected to emergency management. We recommend including members who have no affiliation with emergency management and are identified as experts – meaning they live in the community (or region) and can identify problems or solutions related to environmental disruptions. This process of including the everyday person will help highlight voices typically ignored and build a bridge between agencies and communities. We also recommend creating an evaluation metric for DTA letters of interest. It is unclear how DTA letters are reviewed and determined eligible for selection.
DTA	The number of selections	Increase the number of selections to over ten. The next stage for addressing the number of awardees is indicated under the recommendation entitled *Address long-term needs.*
BRIC	Timing	Extend the application's deadline past January 2022. As mentioned earlier, the application roll-out falls within hurricane season. Hurricanes and tropical storms are among some of the deadliest and costliest disasters within the nation. Throughout our report, we have shown that natural hazards become

Program	Barrier	Recommendation for Improvement
		disasters for marginalized populations given the disproportionate barriers they face on their road to resiliency. We recommend moving the application from a singular end date to multiple end dates throughout the year. We recognize that natural disasters occur year-round, which is also motivation to use multiple dates so that communities who are not facing an event can critically think about their mitigation needs and apply for support.

2. Address long-term needs – the BRIC proposal and review process

The next level of recommendations focuses on addressing long-term improvements of the BRIC application process. This step moves equity and justice to the forefront to spur significant communal transformation (Table 2).

Table 2. Recommendations for Long-term Needs

Program	Barrier	Recommendation for Improvement
BRIC	Access to the application	Earlier, we mentioned that some rural communities might not have access to reliable broadband. We recommend purposefully targeting communities with limited access to the internet to ensure they are aware of the BRIC program and apply if interested. BRIC personnel could work with other federal agencies like USDA Rural Development, U.S. Department of Education Rural Education, and more pronounced organizations like the National Association for the Advancement of Colored People (NAACP), The Bureau of Indian Affairs, the League of United Latin American Citizens, and the Boys and Girls Club, to name a few.
BRIC	Cost-share	Our history shows that low-income marginalized communities are likely living in spaces that were deemed low-valued property targeted for immigrants and the BIPOC community. Today, we see drastic differences in mitigation supports, responses to disasters, and resiliency efforts from natural disasters between wealthy White communities and low-income BIPOC communities. Given the history of forced and unjust settlement for BIPOC communities and recent research that shows federal aid enhancing inequalities, we recommend removing cost-sharing requirements for those identified as *impoverished* communities. Removing cost-share will enable low-income communities to collect federal aid and immediately prepare for the next disaster. This can be done without the hinderance of meeting additional requirements that take expertise in emergency management, resources on disasters, and

Program	Barrier	Recommendation for Improvement
		access to funding sources - all of which low-income communities are less likely to have. We also suggest using a different term, as impoverished implies someone without *strength* or *vitality* and who is *needy*. All of which falls within a deficit-based discourse. Lastly, we recommend working with low-income communities to create an investment plan for maintaining awarded projects. Typically, the burden of maintenance falls on residents who are not likely to know how to maintain infrastructure projects long-term. Through the life cycle of management, communities and agencies can collectively improve the sustainability of a project.
BRIC & DTA	Eligibility	Expand eligibility to include all marginalized communities within the U.S. and U.S. Territories. This means providing opportunities for all AIAN to be eligible, including those who are not federally recognized. Limited access to only federally recognized tribes perpetuates a colonial narrative that privileges one group over another.
DTA	The number of selections	A short-term goal for addressing the number of DTA selections would be to increase recipients to over 10. A long-term goal would be to eliminate a set number of selections to prevent competition between marginalized groups and encourage collaborative efforts. We recognize that this would mean expanding the DTA initiative for communities to benefit. We also recognize that removing a set number will erase the perception of winners and losers.

3. Improve communication between agency and community

The next level of recommendation focuses on improving communication between agency and community. Working in conjunction with local media, state/local public officials, and first responders is essential for identifying and distributing information about programs on a larger scale. Research suggests that clear and concise communication is essential immediately following a disaster (Davis et al., 2021). However, communication could be improved by fostering connectedness before disasters and through mitigation efforts. Based on our review, we suggest improving communication through the following three methods:

(1) Rely on the community and interagency groups to plan mitigation and collect and distribute information.
(2) Conduct community-wide assessments to gauge the varying needs between groups.
(3) Identify the most valuable communication methods by community.

These three methods are broken down in the subsequent paragraphs.

Rely on the community and interagency groups. External groups like the United Way and the American Red Cross are knowledgeable about disaster management and are well-funded. These non-governmental organizations (NGOs) arrive in communities, provide aid during the crisis, and then leave. They are also natural partners with local emergency management agencies that have historical roots in civil defense. In contrast, organizations like the NAACP, the Bureau of Indian Affairs, and the League of United Latin American Citizens may have fewer connections to emergency management but have strong ties to marginalized communities. Our results showed that non-profits who dealt with mitigation and resiliency tended to be small community-based organizations, not as well-funded, but had deep local networks (e.g., churches, housing, other non-profits). However, both organizations at a national level and smaller community-based level are typically left out of emergency preparedness and mitigation. We recommend the inclusion and building capacity of national organizations tailored to BIPOC and locally based, deeply rooted NGOs that serve long-term community development and social service needs. Partnering with such groups can improve connections between marginalized communities and the BRIC program.

It is vital to include NGOs in interagency groups that support marginalized populations. From our archival documents, we found that community organizations had the most success in reaching underserved members by ensuring that aid was distributed equitably. Community-level organizations had already established relationships with individuals hesitant to receive assistance from people they did not know. Considering that local organizations are closer to communities and often support their long-term resiliency efforts, we advise creating long-term sustainable, reciprocal relationships with local NGOs tailored to specific community needs.

Conduct community assessments. Findings showed that local community organizations conducted community-wide assessments to gauge the varying needs of community members. These assessments proved helpful in ethnically and socially diverse communities, particularly around how intersectionality impacts household needs differently within a neighborhood. Additionally, we encourage the use of community-wide assessments through both social media and neighborhood canvassing to ensure residents in remote areas are reached. Using a community assessment could assist the BRIC program with tailoring recruitment strategies to underrepresented groups and provide information on how to best release BRIC applications and meet mitigation needs.

A review of our archival documents showed that organizations used emotional and mental health support groups. Our results suggest that programs largely benefitted from having staff and volunteers with expertise in the mental, financial, and emotional hardships of marginalized communities. Successful programs were relatable and allowed community members to be open and honest about their experiences around the event. We also recommend supporting the emotional and mental health of marginalized populations through equitable access to long-term, free, and culturally based mental health and rehabilitation services.

Identify the most valuable communication methods. Our findings showed the importance of using multiple platforms to reach underrepresented communities around emergency management. Individuals may reside in remote areas with limited broadband access. In another instance, younger generations may rely more on social media to collect their information while

their older peers trust face-to-face contact. Nevertheless, communities may require multidimensional ways to connect with marginalized populations. Data from the 95 programs showed that over 73 percent used multiple platforms to communicate to their community. Our literature review also provided a variety of methods organizations used to communicate disaster preparation tactics effectively. For instance, effective grassroots organizations used in more isolated disasters (tornadoes and fires) included knocking door-to-door to identify and communicate with potential aid recipients. Ultimately, by assessing the community's most valuable form of communication, the BRIC program could ensure that marginalized communities are equitably receiving information on mitigation.

4. Create a culturally competent intervention that fosters community and trust

The next level of recommendations focuses on building community and trust between marginalized populations and the BRIC program. Although this component will take more time and effort to address, the end goal will lead to an equitable distribution of resources for underrepresented communities, a stronger relationship between groups, and ultimately prepare individuals to face future natural disasters.

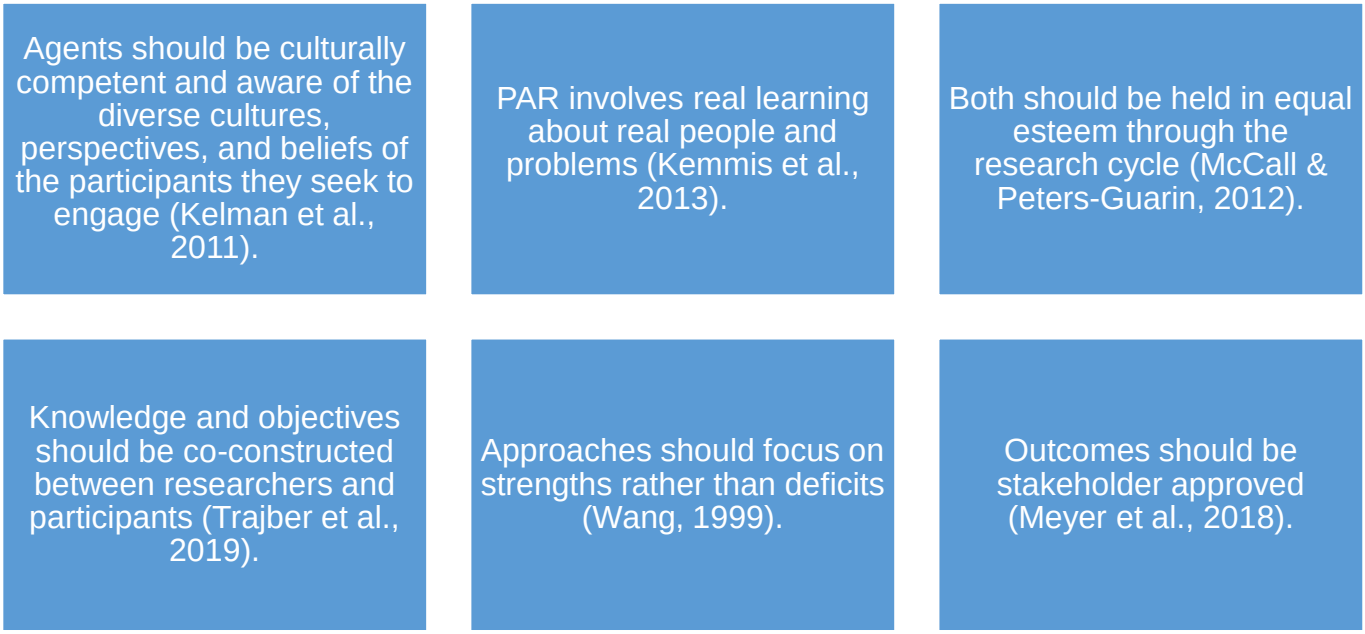
The literature and archival data showed that non-profits and faith-based organizations had established trust with marginalized communities based on existing relationships and proximity to residents. Our findings showed that local organizations have a long-term connection with community members during and after a disaster. Local organizations have a personal connection to the community and are likely impacted by the event as well. The archival data also showed that personnel from NGOs were directly concerned with ensuring that underrepresented community members received aid and that support was distributed equally across all groups. As such, BRIC personnel can work to partner with locally based organizations (e.g., non-profits and faith-based organizations) to address equity in resilience. As indicated above, BRIC personnel can partner with larger organizations that focus on BIPOC community needs and likely have chapters in remote places. Creating a partnership with individuals and communities that are not typically involved in emergency management can lead to building trust with marginalized communities.

One way that BRIC personnel can build trusting relationships is through participatory action research (PAR). Supportive agencies, organizations, and researchers look to design and implement interventions for disaster regions. To do so in a meaningfully, appropriate, and culturally competent way is to use PAR. Figure 11 provides considerations for undertaking PAR in a community-building capacity.

Participatory action research brings researchers and participants together to create lasting improvements for the participants. In this approach, the voices and perspectives of the agents, researchers, and participants are held in equal esteem. This aspect of PAR is crucial in disaster research and intervention, as many populations have often relied on their resources (Ekanaykae et al., 2013) and networks (Erikson, 1976) during disaster periods and have felt disenfranchised by the research and intervention processes (Fuhrmann, 2011; Findholt, 2013; Putsche et al., 2017). Kelman et al. (2011) explained,

> "The ethos behind participatory action research, involving consultation and participation processes, is not for researchers to adopt the responsibility of improving each individual's and family's life. Instead, if individuals, families, communities, and institutions, including governments, are interested in improving, or could be convinced to improve, then researchers and practitioners can use participatory action research to facilitate, support, and assist the parties' own actions" (p. 64-65).

Figure 11. Considerations for PAR



Several researchers and organizations have already leveraged and found success using PAR to develop interventions in disaster regions (e.g., Berke et al., 2011; Cooper, 2019; Meyer et al., 2018; Button & Peterson, 2009; Canlas & Karpudewan, 2020; Kelman et. al., 2011; Raza, 2018; Ruszczyk et. al., 2020; Trajber et. al., 2019; Wang, 1999). Despite these exemplar studies, PAR is a neglected approach that promises to build culturally competent, lasting improvements in disaster regions. Meyer et al. (2018) explains,

> "Participatory action research can improve scientific knowledge and community capacity to address disaster resilience and environmental justice. Evidence from the literature suggests that resident participation enhances assessment of environmental risks, raises awareness, and empowers residents to fight for equitable distribution of hazard and climate risk adaptations. Yet, risk assessment and urban planning processes still frequently operate within expertise-driven groups without significant community engagement. Such fragmentation results in part from a lack of appreciation for community expertise in built environment adaptations and educational tools to support resident involvement in the often-technical built environment planning processes" (p. 402).

A recent study followed a steering council's use of community-partnered participatory research to create community resilience plans for marginalized populations in Los Angeles, California (Wells et al., 2018). Stakeholders participated in community engagement exercises to improve clarity around motivations and address trust with governmental agencies. The authors recommended that organizations specify the roles and responsibilities of outside agencies as well as the communities when building a resilient community. They also suggested that open, collaborative spaces allowed for stronger ties between groups and provided a healthy space for exchanging knowledge.

It is vital to closely examine the social structures between community members, NGOs, and federal agents. Results show that when groups work alongside community-level organizations, they tend to have better long-term, sustainable resiliency amongst marginalized groups. A key component of planning includes a co-produced product with community members, goals representing the values of the marginalized population groups, and strategies designed to fit the intended goal. Also, mitigation plans should include indicators for success that can be used for tracking goal achievement. We recommend creating *Covenants with Communities* – a shared memorandum of understanding where all parties are acknowledged for individual expertise and provide an asset to addressing environmental disasters.

5. Acknowledge and dismantle systemic racism

The policy recommendations are based on the notion of repairing community through structural change. Repairing represents both structural and emotional damage created by historical policies and racist ideologies. Our findings show that structural racism protects privileged groups and harms historically marginalized communities that represent BIPOC populations. Our results also show that we are not living in a post-racial society, as seen by the existing gaps in wealth, health, education, housing, access to resources, and impact of natural hazards. In the end, federal agencies must acknowledge and dismantle systemic racism to completely meet the needs of marginalized communities, especially if the ultimate intent is to ensure that all groups are prepared to face impending natural disasters.

In this section, we provide a brief overview of how the BRIC program can be used to address and disassemble racism. This is not a complete list but should start or continue a conversation around racism in emergency management spaces.

On the Federal Side

Creating an equity framework. Earlier, we noted that equity should be placed at the forefront to ensure that marginalized communities' needs are met. Our findings revealed two U.S. cities that thoughtfully and purposefully used an equitable framework in their local government to initiate systemic change. In 2016, Hilary Lovelace and Jono Cowgill partnered with the East Side Neighborhood Development Company to explore St. Paul's infrastructure improvement budgets (Lovelace & Cowgill, 2016). When analyzing the spending from 2006 to 2015, researchers found that the Eastside, roughly a third of the St. Paul population, received less than 19 percent of Capital Improvement Budget (CIB) funds. When asked about the communal discrepancies, committee members pointed to limited funding. Ultimately, Lovelace and Cowgill recommended that future project scoring include criteria that consider racial equity, strategic distribution, and geographic balancing. They also encouraged committee and task force members

to engage communities of color and other underserved communities in the decision process since the committee application process ignored marginalized populations.

In 2019, Baltimore, Maryland, devised the Capital Improvement Plan (CIP) to address the inequality in community investment (BNIA, 2019). Drawing from the recommendations in the St. Paul CIB, the Mayor and Director of Baltimore City asked the Baltimore Neighborhood Indicators Alliance – Jacob France Institute of the University of Baltimore (BNIA-JFI) to present an equity lens to past funding and provide new indicators for the CIP to consider when creating a budget. BNIA used the Urban Sustainability Directors' Network (USDN) to create their equity lens that applied to past policy and planning. This equity lens specifically considers distributional, transgenerational, procedural, and structural equity. To account for these types of equity, BNIA recommended considering the indicators shown in Table 3. The BNIA also highlighted that planners and policymakers should be long-term players to ensure an effective decision-making process.

Table 3. BNIA Community-Based Indicators

Type of Equity	**Community Based Indicators**
Distributional Equity	Race, Income & Income by Race (Include in the future)
Transgenerational Equity	Age & Wealth/Ownership (Include in the future)
Procedural Equity	Plan Year
Structural Equity	Vacancy, Crime, Life Expectancy

The St. Paul and Baltimore City equity plans acknowledged and analyzed inequity for administrators to consider. The St. Paul report provides tangible steps for addressing colorblindness in planning policies (Lovelace & Cowgill, 2016). The Baltimore Improvement Plan recognizes the impacts of historical disadvantages and provides steps for communal improvement (BNIA, 2019). Both reports highlight the importance of confronting foundational issues that disproportionately impact BIPOC.

Our recommendation is that the BRIC program positions equity at the beginning of conversations, program implementations, application creations, panel discussions, policy decisions, and more. This could also mean that new individuals who are deeply rooted in communities and who may not have an emergency management background should be involved in decision-making around understanding the needs of marginalized communities. By starting the discussion around equity and including non-traditional individuals, marginalized people and communities will not be left out.

Administer culturally sensitive trainings to employees. Employees engaging and interacting with marginalized communities must become aware of the historical and societal factors that make them more predisposed to vulnerability. Colorblind approaches do not work (Goetz, 2020). Colorblind language ignores differences that make communities unique and prevent emergency managers from accurately and efficiently meeting needs. Colorblindness can be interchanged with color mute – essentially saying that one is not blind to race but refuses to talk about it

(Vittrup, 2018). To ensure that marginalized communities' needs are met, BRIC must purposefully get to know the populations they intend to serve.

On the Community Side

The authors of this report will begin a study in July 2021 that will gather the perspectives of community members on how to dismantle systemic racism within the emergency management space and improve mitigation tactics for marginalized communities. We look forward to hearing from the people and presenting strategies as expressed by all communities.

FUTURE DIRECTION

As mentioned earlier, Tema Okun (2021) argued that a *sense of urgency* is a mechanism of White supremacy culture. Immediacy offers little opportunity for democratic, inclusive, and thoughtful decision-making. We understand the seriousness of learning how to best support marginalized communities as they prepare for the next disaster. However, we caution that providing the next research items without fully processing the extent of structural racism has impacted emergency management.

We recommend that BRIC personnel conduct evaluations of current methods to assess the extent of disparities found within the program. We provide a few examples below:

- Conduct research on how marginalized communities view mitigation practices. It would be meaningful to learn how communities that are more susceptible to natural disasters talk about planning. Additionally, to assess the extent to which *planning* is combined with *resiliency*.
- Investigate how, if at all, the cost-sharing agreement of 90/10 percent for small, impoverished communities may prevent communities from even participating in the BRIC application.
- Conduct research on how intersectionality impacts the extent to which marginalized communities apply to the BRIC program. More work is needed on evaluating who is more likely to apply to the BRIC program and who is left out. For instance, *do we see differences in applicants based on gender, race, and income by region*?
- Investigate the demographics of the BRIC program's applicants who fall in the three categories – Identified for Further Review, Not Selected, and Does Not Meet HMA Requirements. *Are applicants who did not meet the HMA requirements more likely to represent marginalized communities?*

We also encourage BRIC personnel to evaluate new items implemented from the policy recommendations. Having a clear assessment of how the BRIC personnel are selecting and responding to marginalized communities will allow the program to create tailored and responsive next steps.

Dismantling structural racism in emergency management will take work and requires a great sacrifice from everyone. The emergency management space is unique in that it works to ensure that all people are safe, healthy, and ready for any unexpected disasters. We encourage the emergency management community to recognize areas for improvement and work for the equity of all bodies, by ensuring that marginalized communities are uplifted and protected and are free from inequities.

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APPENDIX A

Process for Identifying Archival Data

The various strategies utilized to identify programs include the following: utilized Google searches, reviewed non-profit databases, identified partnerships, accessed written sources, studied social media, and conducted disucssions when clarity was needed. We provide an expansion of each item below:

I. Google Searches: We initially conducted a Google search of a specific state and "disaster relief in vulnerable communities" to give us a general idea of the organizations that provide aid and the types of disasters that affect the area. The first two pages of results tended to be the most useful; however, search results were assessed up to the fifth or sixth pages. This technique provided limited success for the most part as many of the organizations eventually found were identified through other means.

II. *Cause IQ & GreatNonprofits*: These websites allowed for identifying some organizations as they enabled one to search for non-profits according to state and category. For this meta-analysis, search results were initially filtered through selecting the "disaster relief organizations" category. To further refine results, all United States and territories were used as filters in individual searches. Although the online databases seemed to provide an extensive range of organizations, this was limited because many of the organizations on the websites were no longer active, had outdated contact information, or had a non-existent online presence.

III. Program Partnerships: A notable trend that emerged was that organizations were part of a larger network or partnership in multiple cases. By identifying larger aid organizations and affiliated partners listed on their website, we could pinpoint and gain insights on small community-based and grassroots organizations that would have been hard to identify otherwise. We also relied on VOAD (Voluntary Organizations Active in Disasters) at the state level to identify community and local-based organizations. Overall, this research technique enabled us to conduct an in-depth analysis of these organizations and programs and determine their targeted strategies to support vulnerable communities.

IV. Written Sources: Another technique used was going through literature and articles to identify highlighted organizations as providing effective aid through after-action reports or significant features in news articles. After-action reports were found through searching for a specific disaster that has occurred accompanied with an "After-action Report" (AAR). In a similar manner, news articles were found to the initial Google searches using the news tab to filter articles. This seemed to allow more community-based organizations to be identified as smaller newspapers provide information on how to volunteer, donate, or help communities after disasters. These newspapers also provide more thorough reports on successful disaster relief programs within their communities.

V. Social Media: After identifying community-based disaster relief programs and organizations, our next step was to reach out to these organizations through email and

phone calls to request discussions. As some of these organizations had limited contact information on their websites or did not reply to our initial requests, we turned to social media outlets to communicate with them. We also looked over old Facebook posts from these organizations, especially posts in the aftermath of hurricanes and other natural disasters, to gain more insight into the types of disaster-relief services provided. This approach also allowed us to identify social media as one of the leading communication outlets for community-based disaster relief organizations.

VI. Discussions: Conducting discussions over the phone and through Zoom with programs that were identified as potentially strong candidates for this meta-analysis. These discussions allowed for significantly more insight into the programs. While this was proven to be successful for many of the programs included within the database, it was also limited to the responsiveness of the organizations. Before speaking with organizations, their identification within the meta-analysis was completed using all information available regarding their work online. Speaking with representatives of organizations also allowed for discussing community and organizational barriers that they identified or encountered when providing aid.

APPENDIX B

De-identified List of Supportive Programs across 5 FEMA Regions

	Entity A	Entity B	Entity C	Entity D	Entity E
Region	2	3	4	6	9
Target Population	Households affected by Sandy or COVID19, elderly, undocumented, people w/language barriers	Low barrier organization, they do not require ID so that people from low-income households can get access	Mutual aid network established for communities in southern city	Black and Brown populations disproportionately affected by disasters in an urban area	Latinx-led and Latinx-focused grassroots organizations; Latinx families and, undocumented Latinx immigrants
Resources provided	Financial assistance to households affected by hurricane Sandy, housing services, reconstruction projects	Food and clothes delivery, subsidized shopping, financial support	Appoint "block captains" in neighborhoods that are provided training on how to serve the community following a natural disaster	Housing repair, disaster clean-up, food/water, mental health support, cash distribution, community membership	Mainly financial assistance; food distribution and housing support
Method of Identification	Community-wide canvassing, client database	Families can contact them via website or phone call, awareness is spread through word of mouth	Communities and local leaders collaborate to identify the "block captain"	Collaboration between local coalitions, word of mouth, self-reporting	Collaboration with local organizations, social media, word of mouth
Method of communication	Website, social media	Follow-up via phone calls or in-person check-ins	Use word of mouth or in-person check-ins to distribute information in their blocks	WhatsApp groups, in-person check-ins	Latinx-led grassroots outreach, multi-media outreach, social media

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Cassandra R. Davis, Ph.D., is a Research Associate Professor in the Department of Public Policy at UNC-CH. Dr. Davis's research focuses on environmental disruptions to schooling communities, specifically low-income communities of color.

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Sarah Haynes is an undergraduate at UNC-CH studying Public Policy and Sociology. Ms. Haynes hopes to impact K-12 public education by diminishing opportunity gaps between BIPOC and white students.

Evan Johnson, Ph.D. is a Teaching Assistant Professor at UNC-CH. He previously served as a Research Fellow at the U.S. Environmental Protection Agency. His research focuses on innovation and public policy, with specific foci including energy innovation, climate stabilization and the impacts of Federal R&D funding on high-tech firms.

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