ABSTRACT

BECKHAM, TIRA LASHAE. Leadership in Rural Disaster Recovery: A Case Study of Robeson County, NC (Under the direction of Dr. Bethany Cutts, Dr. Louie Rivers III, and Dr. Kathie Dello)

Research in rural development documents the significance of community leadership in the success of rural development and the importance of implementing recovery efforts that acknowledge the norms of rural communities (Avant et al., 2013; Beer, 2014; Davies, 2009; Jonix et al., 2016). Rural disaster recovery focuses on the actions that governments take to address the immediate economic, environmental, and infrastructure needs of communities, but does not consider the structural limitations of rural communities, or the transformational power of community leadership. To identify perceptions of the rural disaster recovery leadership system, desirable traits of leaders, and barriers to successful disaster recovery outcomes, this thesis draws from a qualitative thematic analysis of 30 semi-structured interviews of 32 leaders across Robeson County, North Carolina.

Participants describe a recovery landscape that relies on community leaders - non-titular rural community members who emerge in response to communities' immediate recovery and resource needs. Community leaders are successful in recovery outcomes due to their existing social capital with community members. Participants report that the absence of relationships between decision-makers and the communities they serve perpetuates cycles of resentment and distrust in rural communities. Additionally, the misrecognition of the historic characteristics that affect local communities' ability to adapt and recover from climate impacts is presented as a barrier to effective disaster recovery. We also find that the development of social capital within rural communities ensures the representation of socially vulnerable communities in disaster recovery planning. The results of this study illustrate the importance of community-level leadership in
resource distribution, community building, advocacy, and the development of local disaster recovery and resilience initiatives in rural communities.
Leadership in Rural Disaster Recovery: A Case Study of Robeson County, NC

by
Tira Lashae Beckham

A thesis submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the degree of Master of Science

Natural Resources

Raleigh, North Carolina
2022

APPROVED BY:

___________________
Dr. Bethany Cutts
Committee Chair

___________________
Dr. Louie Rivers III

___________________
Dr. Kathie Dello
Tira Beckham is a Master of Science in Natural Resources at North Carolina State University in the College of Natural Resources. Her research interests include equitable governance, recovery, and resilience planning in the face of a changing climate. In addition, Tira is interested in the urban-rural divide and the disproportionate impact of climate change on low-income and rural communities.

Prior to beginning her graduate career, Tira had experience working with city and state governments participating in local environmental justice initiatives and helping to coordinate statewide resilience planning. Tira has seen firsthand how urgent the task of climate change adaptation is for both ecosystems, communities, and government systems and has made it her responsibility to serve those who face the greatest risk from environmental hazards.
ACKNOWLEDGMENTS

Research contributions include the following: Tira Beckham (North Carolina State University, Department of Forestry and Environmental Resources): conceptualization; methodology; formal analysis; writing - original draft; writing - review and editing. Dr. Bethany Cutts (North Carolina State University, Department of Parks, Recreation, and Tourism Management): conceptualization; funding acquisition; resources; supervision; writing – review and editing. Dr. Louie Rivers III (North Carolina State University, Department of Forestry and Environmental Management): supervision; writing – review and editing. Dr. Kathie Dello (North Carolina State University, State Climate Office, North Carolina State Climatologist): writing - review, and editing. I also acknowledge contributions from Dr. Laura Bray: conceptualization, investigation; funding acquisition. Olivia Vilá: methodology; investigation; Margaret Crites, Sallie McLean, Angela Allen, Hannah Goins, Nathan McMenamin: investigation and community relations; Rev. Mac Legerton, Adrienne Kennedy, Dr. Steve Marson, Dr. David Shane Lowry: project oversight. Finally, I acknowledge and thank each of the participants who volunteered their time to participate in the research study, and those individuals in Robeson County and beyond who introduced our team to the community.

This research was funded in part by a U.S. Geological Survey Southeast Climate Adaptation Science Center (SE-CASC) graduate fellowship awarded to Tira L. Beckham (2020-2021). Project BRIDGE was made possible by North Carolina Sea Grant (Project No. R/18-REC-3); U.S. Department of Agriculture’s McIntire Stennis program (Project No. NCZ04203); and the National Oceanic and Atmospheric Administration (NOAA) Regional Integrated Sciences and Assessments (RISA) Program: Innovating a Community-based Resilience Model.
on Climate and Health Equity in the Carolinas (2021-2026) (Project No. NOAA-OAR-CPO-2021-2006677).
# TABLE OF CONTENTS

LIST OF TABLES ..................................................................................................................... ix
LIST OF FIGURES .................................................................................................................. x

**Introduction** .......................................................................................................................... 1

**Literature Review** .................................................................................................................. 2
  - Disaster Recovery Challenges in Rural Communities .................................................. 2
  - Collaborative Governance of Rural Communities .......................................................... 3
  - Leadership in Rural Disaster Recovery ............................................................................. 6
  - Policy Context: North Carolina’s Commitment to Address Climate Recovery ........... 9
  - Research Objectives .......................................................................................................... 11

**Methods** ................................................................................................................................. 12
  - In-depth Interviews with Disaster Recovery Leaders .................................................. 14
  - BRIDGE Builder Dataset ................................................................................................. 15
  - Ensuring Trustworthiness ................................................................................................. 15
  - Transcript Analysis ........................................................................................................... 18
  - Reflexivity Statement ......................................................................................................... 20

**Results** ................................................................................................................................ 20
  - Participants of the Rural Leadership System .................................................................. 21
  - Emergent Themes in the Rural Disaster Recovery Leadership System ...................... 23
  - Objective 1: Characteristics of the Current Robeson County Disaster Recovery Leadership System .................................................................................................................. 27
  - Objective 2: Unfilled characteristics of the Leadership System .................................... 32
  - Objective 3: Perceived barriers to effective rural disaster recovery leadership ........... 34

**Discussion** ............................................................................................................................... 38

**Conclusion and Recommendations** ...................................................................................... 41

**Appendices** .......................................................................................................................... 55
LIST OF TABLES

Table 1: Actions taken to establish the trustworthiness of data ........................................ 16
Table D-1: BRIDGE Builder Participant Leadership Status .................................................. 74
Table D-2: Comparison of Robeson County and BRIDGE demographics ............................. 74
LIST OF FIGURES

Figure 1: Themes and sub-themes used to explore the disaster recovery leadership system ..... 23
Figure 2: Relationships between themes and subthemes of Robeson County disaster recovery leadership ......................................................... 27
INTRODUCTION

Disaster recovery in rural and socially vulnerable communities presents a unique challenge to governments, as conventional recovery solutions can perpetuate existing structural inequities and degrade community autonomy (Tate et al., 2020; Flanningan et al., 2011). Governance solutions that rely on top-down decision-making neglect the needs and values of socially vulnerable communities, which often differ from those of larger, metropolitan communities. Rural and socially vulnerable communities require strong, recognizable leaders who are deeply committed to their needs, values, and success. Despite its documented significance to sustainable rural development (Smailes, 2002; Jonix et al., 2016; Beer, 2014; Avant et al., 2013), leadership remains a poorly understood component of the disaster recovery process and the development of climate change resilience in rural communities (Davies, 2009).

In disaster research, the recovery phase is often described as a long-term process that offers opportunities for communities to redevelop and build back social, political, economic, and infrastructure systems in a way that increases resilience for the subsequent disaster (Kapucu & Liou, 2014; Schuller & Maldonado, 2016). Existing studies have described effective governance of the disaster recovery phase as a “learning exercise” for leadership based on informed expectations to develop safe and sustainable outcomes for an individual community and the distribution of these outcomes for participants over time (Ostrom, 2001; Nakagawa and Shaw, 2004). While often assumed to have a causal relationship to governance, leadership implies a higher level of cohesion and trust between the governing body and the governed (Avant et al., 2013); in contrast to the hierarchical nature of monocentric governance (Kooiman, 2003; Ostrom, 1993). As such, leaders must acknowledge pre-existing structural and systemic
inequities by collaborating with and incorporating the experiences of individual communities into goal-setting and decision-making (Valente et al., 2015).

This study aims to further understanding of rural leadership, its role in disaster recovery, and the implications of community leadership inclusion in state-level disaster recovery and resilience initiatives.

**LITERATURE REVIEW**

**Disaster Recovery Challenges in Rural Communities**

Localities facing disaster often rely on their local governments, community organizations, and non-governmental organizations (NGOs) to act as advocates for their interests and to help them acquire the financial, assistance, or knowledge resources needed to recover from the damaging effects of climate change. Efforts have been made to prioritize rural vulnerabilities - the aspects of the social, environmental, or political systems that are susceptible to the adverse effects of climate change (Davies, 2009). Disaster recovery and resilience policy implementation mechanisms often focus on building individual and community-level capacity to withstand the structural impacts of climate disasters by training residents to adapt to the conventions and culture of state and federal policy (Matin et al., 2018; Schuller & Maldonado, 2016). These policy interventions often lack cultural relevance in ways that ultimately degrade local resilience and reinforce exclusion and distrust in government (e.g. Jurjonas et al, 2020).

The values and priorities of rural and socially vulnerable communities significantly differ from those in wealthier urban and suburban communities - as rural communities often have stronger community cohesion, and stronger ties to their natural environment (Beer, 2014; Avant et al., 2013). Therefore, resilience efforts must relate to the unique capacities presented by the community, rather than the other way around (Fiedler et al.1971; Schuller & Maldonado, 2016).
Efforts to increase resilience must acknowledge a community’s own perception of their position within the human-environmental system and account for their respective realities and for their need for a change of circumstance to avoid imbalances of power in the future (Matin et al, 2018).

Rural communities in the US often lack the resources, knowledge, and funding to initiate sustainable, long term climate resilience efforts, so external paternalism has become the standard governmental response - telling communities in need how they ought to respond based on a “one size fits all” approach without the input of the communities themselves (Schuller & Maldonado, 2016). By using a paternalistic, top-down approach to governance, local, federal, and state entities may be able to provide short-term recovery assistance, but these efforts will also restrict the autonomy of low-income communities, altering the socio-political dynamics of communities that have been historically oppressed.

Research in rural engagement and disaster recovery touts solutions that focus on the governance of rural communities, neglecting the transformational impact of community leadership on successful recovery outcomes (Davies, 2009; Nakagawa & Shaw, 2004).

Collaborative Governance of Rural Communities

The terms leadership and governance are often used interchangeably or causally, but theoretically distinguishing the terms has practical implications for disadvantaged communities recovering from disaster (Avant et al., 2013; Valente et al., 2015). Governance is roughly described as the actions that governments and state actors take - such as controlling the allocation of resources and setting out the means and standards for the operations of institutions; as well as providing state sponsored economic and social programs to be guided by powerful
state actors alone and disseminated down to municipalities without (Keyim, 2018; Howlett & Ramesh, 2014).

When describing the relationships between a governing body and the governed, studies refer to monocentric or top-down governance systems, entities and organizations influence the behavior of other participating actors through steering and control (Kooiman, 2003; Ostrom, 1993). Steering dictates the direction of government decisions; in monocentric systems, actors in positions of institutional power determine the goals of communities, leaving the governed to follow suit. In this model of governance, decisions are made without the consultation of community members or consideration of the issues that directly affect them. Monocentric governance practices are inherently isolationist and operates under the assumption that the function of the government is to paternalistically solve communities’ problems and that communities are incapable of making informed decisions for and governing themselves (Ostrom 1993). Under this assumption, larger, more powerful actors in the governance process create policies for local implementation.

Contemporary research in effective governance discuss and recommend new forms of governance that rely on collaboration (Keyim, 2018; Gibson, 2019), community empowerment (Daniels et al., 2019), and cultural relevance (Shreve, 2015; von de Porten et al., 2015); particularly, studies refer to collaborative, cross-scale governance systems as a solution to hierarchical systems. Similar systems of governance have been recommended for effective policy creation and implementation; these include collaborative governance (Keyim, 2016), participatory governance (Fischer, 2012), polycentric governance (Ostrom, 2010), among others. Overall, these systems refer to the cooperation between state and non-state actors across multiple scales to build consensus among stakeholders and organize society in an efficient and equitable
manner (Keyim, 2018; Cash et al., 2006; Bianchi et al., 2021). Collaborative governance systems are implemented by various state and non-state actors working in “non-hierarchical and flexible alliances” for the success of policy and program creation and to generate successful long-term outcomes for the greater public (Keyim, 2018). These systems attempt to address the limitations of monocentric systems by assembling multiple entities outside of the hierarchical governing system engaging at multiple scales of decision making (Ostrom, 2010; Keyim, 2018; Gibson, 2019).

By nature of policy implementation, the delivery of public services requires the inclusion of actors on multiple institutional scales, but this inclusion in the process of governance does not necessarily imply active collaboration or policy implementation that adequately meets the structural, physical, or societal needs of communities (Bianchi et al., 2021). Proponents of collaborative governance practices believe that the socio-economic functions of society can be more effectively arranged through active collaboration between state and non-state actors, rather than being directed by the state alone (Keyim, 2016; Keyim, 2018; Gibson, 2019).

Collaborative governance systems are considered attractive because they allow for increased dissemination of policy information across multiple actors and increases cultural relevance in decision-making; however, all governance systems must contend with the challenges presented by the power dynamics that plague governance on all levels. Issues with power dynamics within societies can be described as the uneven capacity to influence the goals, processes, and outcomes of the governance system across scales of state and non-state actors (Morrison et al., 2019; Gibson, 2019). Access to power influences the interactions between individuals, organizations, and agencies that guide policy and rule creation. Larger actors with access to social, political, and economic power tend to receive more support, priority, and access
to resources for the success of their goals, while communities with less power are strained by a lack of skills, expertise, capital, and staff to utilize available resources (Gibson, 2019; Teemer et al., 2010). In rural communities, collaboration between communities and state/municipal actors and the implementation of collaborative governance practices are often constrained by insufficient access to financial, social, staff, or technical resources. The disproportionate distribution of power in governance systems can potentially lead to structural inequities and biases and resource injustices in practice, as rural communities are provided with resources that they do not have the skills, staff, or capital to receive the full range of benefits that collaboration would provide (McGinnis, 2016).

**Leadership in Rural Disaster Recovery**

The concept of leadership is ambiguous and challenging to adequately define and separate from governance because individuals have varying levels of investment and commitment to the broader community (Valente et al., 2015). Moreover, leadership cannot be characterized by a single set of behaviors, a titular or societal position, or a set of initiatives (Avant et al., 2013; Valente et al., 2015). Leadership has been broadly defined as the process by which a leader - either as an individual or an organization - creates an achievable set of mutually established goals and actions through the mobilization of a larger group or community (Chemers, 1997; Avant et al., 2013; Valente et al., 2015). In this definition, leadership implies a greater level of social cohesion between the leader and his or her followers, as the responsibility of decision-making does not rest on the leader(s) alone, but rather as a reciprocal event in which the leader and their followers are mutually affected by the outcomes of the process. Leaders are provided with the historical, cultural, and socioeconomic context of communities to inform decision-making, and followers are given a voice in the decisions which directly affect them.
Leadership, as a process, emphasizes the importance of relationship-building as a means of achieving outcomes (Avant et al., 2013).

Leadership in rural communities is not typically rooted in the traditional hierarchical relationships of monocentric governance; instead, leadership is present on all levels of society, and does not always emerge from local governmental institutions. (Beer, 2014; Stimson et al., 2002). Rural leaders are able to achieve a high level of community agreement and approval of recommendations for government organizations through social participation and relationship building, fostering community resilience and cohesion (Valente et al., 2015; Beer, 2014; Smailes, 2002; Sorensen & Epps, 1996). Social relationships and exchanges with leaders are essential for effective, lasting outcomes in rural communities (Nakagawa & Shaw, 2004; Mirzaei et al, 2020). Trust and cohesion between rural leaders and community members reduce the social costs associated with interaction and increase the efficiency of the governance process as social, political, and financial resources that would be used to monitor the efficiency and effectiveness of governance are replaced by the trust and assurance that leaders will adequately represent the needs of community members (Coleman 1988; Pretty & Smith 2004).

In rural communities, social participation and leadership are driven by place attachment and social responsibility and are not always indicated by titular position or obligation (Grocke et al., 2021; Avant et al., 2013). Rural community members derive a sense of belonging, identity, and self-worth from the places they call home, and local leaders are motivated to respond to emergent needs out of a sense of pride and responsibility for the well-being of their communities (Grocke et al., 2021). Rural communities have considerable ties to the cultural significance of their natural environment, as well as depending on aspects of their environment for industry, agriculture, and recreation (Myers et al., 2017).
Rural government officials face multiple ongoing socioeconomic challenges associated with a lack of power and resources, including increased unemployment, blurred responsibilities of government officials, lack of staff and financial resources for policy implementation, out-migration and aging population, and the deterioration of the amenities and services which comprise rural economies (Keyim, 2018; Gibson, 2019). Many rural government actors face the challenge of “wearing multiple hats” as staffing and skill constraints require individuals to assume various responsibilities simultaneously, in addition to their titular obligations (Jonix et al., 2016). While individuals can apply lessons learned in one capacity to their other roles, local governments are often overextended during normal operations; and can be overwhelmed by the environmental, political, and socio-economic challenges presented by a disaster like a flooding event. Additionally, rural communities typically have economies that rely on sectors sensitive to climate hazards (IPCC, 2014). Disaster recovery governance practices often have the potential to neglect the limitations of rural government capacity and the place-based values of rural communities.

There is limited understanding of the role leadership plays in rural disaster recovery. This gap in knowledge may be attributed to the fact that most research exploring recovery decision-making and collaborative action focus on the actions governments take or the policy implementation processes rather than the qualities of individual leaders and the way they lead their followers (Nakagawa & Shaw, 2004; Jensen & Ong, 2020). Typically, governance in disaster recovery focus on providing solutions that address short-term needs quickly, return to normal business operations, and rebuild infrastructure (Davies, 2009). Government officials are forced to address immediate recovery needs in an effective and efficient manner, while also maintaining the foresight to avoid exacerbating long-term societal needs (Finucane et al., 2020).
Problems emerge with this ‘quick solutions’ thinking, as solutions that primarily focus on infrastructure-based risks neglect socially vulnerable communities (Matin et al., 2018; Tate et al., 2020). Social vulnerability refers to the social, political, and economic stressors which limit a communities’ ability to withstand the adverse impacts of climate hazards (Tate et al., 2020; Flanagan et al., 2011). Socially vulnerable communities often have a higher risk of flood exposure because the societal limitations and structural inequities on the communities' ability to thrive are exacerbated by the physical and health effects presented by a climate disaster (Fitzpatrick & Spialek, 2020; Tate et al., 2020). Recovery outcomes that neglect socially vulnerable communities can disproportionately benefit communities that already have access to power, resources, and social opportunities not typically available in socially vulnerable communities; reinforcing perceptions of inequitable and ineffective governance (Finucane et al., 2020).

There is a significant basis for the study of interactions between the various leaders within rural communities. This paper aims to apply this knowledge in the context of disaster recovery in rural communities where social relationships and local level leadership remain central to external interactions. Studying the interactions and manifestation of rural leadership has profound implications for how state and national recovery policy might best enact programs and policies to support resilience. By accessing the needs of local leaders, it is possible to use the shared experience of a climate disaster to increase resilience and build stronger communities (Avant et al., 2013).

**Policy Context – North Carolina’s Commitment to Address Climate Recovery**

The disaster recovery landscape in North Carolina is changing as a result of the devastation caused by Hurricanes Matthew and Florence. The state-wide change in priority to
climate disaster recovery and resilience led to the creation of the North Carolina Office of Recovery and Resiliency (NCORR) by the state legislature in October of 2018. NCORR, under the umbrella of the Department of Public Safety, has been charged with the broader goal of executing multi-year recovery and hazard mitigation projects and administering HUD Community Development Block Grant (CDBG) Disaster Recovery funds to affected local governments (H.B. 500).

Since its formation, the charge of NCORR has been expanded to include projects and initiatives specifically aimed toward building state and local capacity by providing technical assistance to local governments, guiding intergovernmental coordination for state-wide disaster recovery, and creating and administering grant programs for local governments facing disaster recovery challenges. To accomplish these goals, NCORR has launched its Resilient Communities Program. This program intends to provide technical support and funding for local flood and hazard mitigation planning, as well as providing climate science resources and access to hazard data and modeling.

Further, NCORR has been directed to provide public information, outreach, and case management to local governments and to build relationships with regional councils of governments to identify opportunities for capacity-building projects and activities. In its charge to NCORR, the state legislature has instructed NCORR to incorporate local knowledge and community goals to create a prioritized set of projects and funding strategies to be implemented by the state government.

This is a pivotal moment in North Carolina in which state organizations are being encouraged by the legislature to engage in community leadership by working directly with local communities in the decision-making process. The establishment of NCORR and its various
charges related to community resilience, outreach, and local knowledge provides a unique opportunity for state agencies to encourage the participation of local leaders in state-wide decision-making and planning efforts. The legislature has tasked NCORR with communicating and collaborating with local communities in the governance process and must familiarize themselves with the complexities of the local leadership system in order to inform effective and equitable solutions for the state (H.B. 500). There is a crucial need to understand the leadership needs of rural communities in North Carolina to support statewide disaster recovery governance (Davies, 2009).

**Research Objectives**

The compound disasters created by Hurricane Matthew and Florence in Robeson County, NC provides the opportunity to investigate the intersection of governance and leadership. To do this, we explore local perceptions of who has the capacity to lead, the actions leaders take, the relationships leaders form, and the contextual factors that leaders must contend with as they negotiate access to resources and aim to make disaster recovery decisions that aid regional resilience. An understanding of these interrelated elements of the local disaster leadership system - the actions and relationships of the various leaders in a single community - and the extent that it is independent from elements of traditional disaster recovery governance is critical to ensuring that NCORR and other resiliency-focused agencies are improving their capacity to work with communities negotiating recovery and resilience from a position of disadvantage or misalignment with existing policy implementation practices. With this in mind, we address three research objectives:

1. Characterize the effectiveness of the disaster recovery leadership system in Robeson County, NC following flood disasters in 2016 and 2018.
2. Identify desirable actions, relationships, resources, and contextual issues that are unaddressed by the current disaster recovery leadership system.

3. Identify the perceived barriers to successful disaster recovery leadership.

**METHODS**

Given the need to strengthen leadership as a framework that can be used to understand and develop more inclusive and innovative systems for rural disaster recovery, this study uses a thematic analysis approach to analyze qualitative interview data. Thematic analysis is an increasingly utilized method for identifying, analyzing, and interpreting patterns of meaning - or themes - within qualitative data (King, 2004; Braun & Clarke, 2006; Nowell et al., 2017). Thematic analysis can be a useful approach in instances where qualitative data gathered through interviews has the potential to both strengthen existing theories and determine if new ones are needed (Braun & Clarke, 2006; Nowell et al., 2017). Rural development frameworks document the significance of community leadership and provide a foundation for analyzing and understanding leadership system development (Chemers, 1997; Avant et al., 2013; Beer, 2019). However, they have not been rigorously tested in the context of rural and racially diverse disaster recovery. Therefore the extent that this approach offers insights into known limitations of disaster recovery governance (Davies, 2009; Nakagawa & Shaw, 2004; Kapucu & Liou, 2014) is not well established. To develop a rich understanding of the leadership system as a product of interacting perceptual elements shaped by past experience, we adopt a sampling approach that is also intended to capture diverse views through in-depth interviews with a broad range of leaders whose work is highly focused in Robeson County, North Carolina (USA).
Robeson County, North Carolina was purposefully selected as the target location and jurisdictional boundary and level of analysis in this study for a number of reasons. Robeson County disaster survivors negotiate recovery from positions of ecological and social disadvantage that are reinforced through policy (see Jurjonas et al., 2020). Thus, in the absence of opportunities for vertical and horizontal collaboration to enable recovery, we expect experiences of climatic disaster and the emergence of community-level leadership to reconcile how state-led recovery policies and practices envision recovery and the realities of their communities’ experiences with survivorship.

Biophysically, land use and flood risk in Robeson County have the potential to generate complex cumulative risks while the distance from the coast and relatively low population density reduce alignment with policies to aid recovery (Marson & Legerton, 2021). The Lumber River basin, also known as the Lumbee River, covers 3,343 square miles in all or part of 10 counties across North Carolina directly through the city of Lumberton in Robeson County (NC DEQ, 2018). The Lumber River was regarded by the National Parks Service for its “outstandingly remarkable” natural resources and 81 miles of the basin was designated as a National Wild and Scenic River (NC DEQ, 2018). In 2016 and 2018, respectively, extreme inland flooding generated by Hurricane Matthew and Hurricane Florence led to unprecedented levels of disruption throughout Robeson County. Much of the county rests within a significant 100-year flood plain of the Lumber River basin. Additionally, the NC Department of Environmental Quality reported 81 incidents in the Lumbee River Watershed during Hurricane Florence, including high freeboard at 29 animal operations, inundation of 9 pre-regulatory landfills, and 2 coal ash pond breaches (Beeson 2018; NC DEQ 2018). Over two million gallons of untreated
sewage spilled during Hurricane Florence in Robeson County towns of Lumberton and St. Pauls (National Hurricane Center 2019).

Socially, the Robeson County population is predominantly rural and is noted by the US Department of Agriculture (USDA) as a place of persistent poverty (U.S. Department of Agriculture, 2016) and designated by the North Carolina Department of Commerce as a Tier 1 county - ranking lowest in the state in terms of property tax base and median household income, and among the lowest in population growth and average unemployment rate (NC Department of Commerce 2021). The population of Robeson County is also one of the most racially diverse in the US - composed of about 40% Native American, 24% African American, 26% white American, and about 9% Hispanic/ Latinx community.

In-depth interviews provided the space for disaster recovery leaders (subsequently referred to as interview participants) to discuss the disaster recovery leadership system in the context of efforts to enable transitions toward resilience.

**In-Depth Interviews with Disaster Recovery Leaders**

The in-depth interviews represent a secondary analysis of a larger data corpus generated as part of an ongoing transdisciplinary project to investigate the impact of flooding on community resilience and recovery, broadly named Project BRIDGE (Building Resilience by Innovating through Diverse Group Engagement; described in Bray et al. 2020). We have referred to the subset of interviews used in this study the BRIDGE Builder dataset. The BRIDGE Builder data includes responses to the following high-level questions (see Appendix A for the full interview protocol): (1) After each hurricane, how did the community respond? (2) Who are the leaders in the community who can really make a difference? Who drives change? (3) What kinds of things have local, state, and federal government agencies done to help? (4) Overall,
what do you hope will happen to this area in the future? (5) What will it take to get from what you expect to see to what you would like to see?

**BRIDGE Builder Dataset**

The BRIDGE Builder data set includes responses to semi-structured interviews across 32 disaster recovery leaders. We identified leaders through purposive sampling and participants referrals (Ryan & Bernard, 2003). Interviews took place from 3/12/2019 through 1/09/2020. In total, a heterogeneous sample of 30 interviews with 32 leaders was conducted and used for this analysis. Interview participants chosen were individuals who were designated as knowledgeable about climate resilience and were researcher-assigned as a Volunteer/Activist, Decision Maker, or Community Organizer. Within this interview set, 12.5% of participants were identified as Community Organizers, 34.4% as Decision Makers, and 53.1% as Volunteer/Activists. Of the 32 interview participants included in this set, 27 were also identified as hurricane survivors.

BRIDGE Builder participants ranged from ages 18 to over 70. 35.5% of participants identify as Black, 29% as Native American, and 22.6% as White European. Additionally, a few participants identified with more complex races and ethnicities: (a) White and Jewish, (b) Chinese American, (c) White and Latinx, and (d) African American and Native American. The BRIDGE Builder participants represented county government (9.4%), City government (25%), non-governmental organizations (9.4%), religious leaders (6.3%), local businesses (6.3%), K-12, and University (28.1%), Other (9.4%). One participant was retired at the time of their interview.

**Ensuring Trustworthiness**

Several actions were taken throughout the research process to ensure the trustworthiness of the BRIDGE Builder sample and resulting dataset (Guba, 1981; Shenton, 2004; Nowell et al. 2017). These actions are summarized in Table 1. We used a semi-structured interviewing
strategy to best accommodate and explore the range of meanings respondents have made of the disaster recovery experience and to clarify the intended meanings of challenging questions, identify miscommunications as they arise, and ensure that we could reciprocate by sharing relevant resources with leaders negotiating recovery at the end of each interview (Hubbard et al. 2020; Vila et al., in progress). Three leaders explicitly refused to participate due to time constraints. Ten leaders invited to participate in the project did not respond to our requests to complete interviews. Participants chose the setting for the interview. Most participants elected to be interviewed in a private office or at home. The Institutional Review Board (IRB) at North Carolina State University in Raleigh, North Carolina (NC) exempted this project (Protocol #11846).
Table 1. Actions taken to establish the trustworthiness of data throughout the research process

<table>
<thead>
<tr>
<th>Quality criterion</th>
<th>Phase of research process</th>
<th>Reported on page #</th>
<th>Means of establishing trustworthiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credibility</td>
<td>Research design</td>
<td>14</td>
<td>Use of well-recognized research methods</td>
</tr>
<tr>
<td></td>
<td>Data collection</td>
<td>18</td>
<td>Development of familiarity of research community through observation of and participation in meetings regarding disaster recovery</td>
</tr>
<tr>
<td></td>
<td>Data collection</td>
<td>18</td>
<td>Triangulation via different types of leader participants</td>
</tr>
<tr>
<td></td>
<td>Data analysis</td>
<td>18</td>
<td>Recurring meetings with collaborators centered on concept development and data interpretation</td>
</tr>
<tr>
<td></td>
<td>Reporting</td>
<td>20</td>
<td>Description of researcher background and qualifications</td>
</tr>
<tr>
<td></td>
<td>Reporting</td>
<td>Appendix B</td>
<td>Thick descriptions of phenomena under study via proof quotes and contextual details relevant to those quotes</td>
</tr>
<tr>
<td>Transferability</td>
<td>Reporting</td>
<td>15</td>
<td>Boundaries of study conveyed by reporting contextual details about respondents</td>
</tr>
<tr>
<td>Dependability</td>
<td>Reporting</td>
<td>19</td>
<td>Detailed description of research methods provided (to facilitate study replication)</td>
</tr>
<tr>
<td>Confirmability</td>
<td>Reporting</td>
<td>20</td>
<td>Admission of researcher’s beliefs and assumptions</td>
</tr>
<tr>
<td></td>
<td>Reporting</td>
<td>Appendix B</td>
<td>Full codebook reported providing audit trail of theme abstraction</td>
</tr>
<tr>
<td></td>
<td>Reporting</td>
<td>19</td>
<td>Detailed description of research methods provided (to facilitate scrutiny of results)</td>
</tr>
</tbody>
</table>

Skilled community members from Robeson County were hired as community interview specialists and trained as part of data collection (for additional details see Vilá et al. (in
preparation). Community interview specialists identified participants using purposive samples generated from lists of participants in Robeson County Long Term recovery meetings as well as their personal and professional networks. When participants consented, we video and audio recorded the interview; in addition, the research team recorded detailed field notes. Weekly team meetings between community specialists and university research personnel ensured interview consistency, quality, and diversity. A broad range of titular and community leaders participated in the interviews, including city and county government officials, city and town mayors, religious leaders, non-profit managers, first responders, emergency managers, and city council members from multiple cities. The inclusion of leaders across sectors and across a range that includes both elected, appointed, and emergent leaders allows us to assess leadership separately from governance while enabling participant triangulation and for a more inclusive view of strengths, limitations, and constraints affecting the current leadership system in relation to recovery. Team meetings and presentations to the community advisory board ensured regular quality assurance overviews. We used these assessments to identify a point when the sample was sufficiently diverse with both the (a) representation of leaders within the county and (b) the overall demographic and geographic diversity of survivor experiences. Upon the development of the final coding for leadership themes, the primary and secondary coders concluded that randomly omitting 2-3 interviews would not lead to a reduction in themes or codes. This is consistent with methods used to assess saturation in other studies drawing from diverse samples (Hennink & Kaiser 2022, Morse et al. 2014). Community interview specialists (paid research assistants with lived experience in Robeson County) and university personnel co-led recruitment, data collection, and analysis to ensure individual interview data and transcripts were accurate and returned to each individual participant for verification. To verify that the interview subset was
sufficient for secondary analysis, we randomized the interview order and used code frequency
counts to assess code meaning saturation (Hennink & Kaiser 2022). Code meaning saturation
was achieved after an average of 19.3 interviews.

**Transcript Analysis**

We used NVivo 12 Pro (12.6.1.970 (64-bit)) to analyze verbatim transcripts of the
BRIDGE Builder Subset. Responses to the questions analyzed in this paper were an average of
6.5 pages and 2264 words (min 3 pages, 1043 words; max 13 pages, 5911 words). To code the
data, we used open coding to allow themes related to expressions of leadership to emerge (King,
2004; Corbin & Strauss 2015). Axial coding strategies were used to organize codes, and constant
comparison allowed us to align common themes with existing research relevant to disaster
recovery leadership and rural climate resilience (King, 2004). This process was led by the lead
researcher, completing regular checks with others on the research team to ensure codes were
responsive to the data and informed by existing theory. We developed a code manual that
included detailed definitions and exemplar text for each code to ensure consistency in coding
methodology (Appendix B). To ensure a credible data analysis approach, we completed field
notes during data collection, and regular memos during the codebook development process in
order to document data items significant to the leadership system and emerging impressions that
may form the basis of themes across the data set (Nowell et al., 2017). Inductive thematic
coding analysis was used to identify the latent themes across all interviews that inform
participant perceptions of local leadership during flood recovery (Braun & Clarke, 2006).
Changes to the analytic approach were documented in the audit trail and reflexive journaling was
completed by the lead researcher and shared with team members (Starks & Trinidad, 2007). To
enhance credibility, the full dataset was reviewed by a secondary coder (Côté & Turgeon, 2005; Lincoln & Guba, 1985).

Leadership qualities were coded when participants expressed the presence or absence of some characteristic of the recovery leadership system; for example, if a participant described a lack of communication between communities and decision-makers during disaster recovery, that portion of the transcript would be coded under ‘Communication’.

The final codebook identified four key elements of the disaster recovery leadership system: Actions, Relationships, Recognition, and Resources - categorized as parent nodes in NVivo 12 Pro. Definitions with exemplar text from interviews can be found in Appendix B.

To analyze the leadership system, we used concept modeling in NVivo 12 Pro to interpret and describe relationships between key themes, identify emerging patterns, and visualize the connections within the coding framework. Concept modeling was used to describe relationships between the research objectives and the data findings as well as the overall relationships between identified themes as presented by the data. Finally, we used the online application Kumu (2022) to construct an interactive visualization of the concept model.

Reflexivity Statement

Community specialist data collection team consisted of one male-presenting and four female-presenting members from 20 to 60 years of age. Community specialist team members’ racial and ethnic identifications included Lumbee Indian-Black, white, white-Latina, and Chinese American. One or more team members had previous experience in community organizing, trauma counseling, interviewing in Spanish, and collecting oral histories. All had direct experience with damage and displacement due to Hurricane Matthew and Hurricane Florence and lived in Robeson County at the time they were hired. The university team that
Supported recruitment, data collection, data processing, and data analysis relevant to this paper includes four female-presenting team members including one faculty member, two Ph.D. students involved from project inception, and one MS student who joined the project in 2020. University team members’ racial and ethnic identifications include white, white-Latina, and Black. They ranged in age from 22 to 39 at the inception of the project. Two have had direct experience with damage and displacement due to a hurricane. None were displaced by Hurricane Matthew or Hurricane Florence. One or more team members have prior experience with community engagement and theory related to social-ecological resilience, environmental justice, and indigenous governance. One researcher had experience working with state government and participated in the development of the North Carolina Climate Risk Assessment and Resilience Plan (NC DEQ, 2020).

**RESULTS**

Thematic analysis of interviews with disaster recovery leaders revealed the opportunities, barriers, and constraints to effective local leadership in disaster recovery and the implication for the resilience of Robeson County NC. Existing literature provided a useful framework for coding and interpreting interview responses. Additionally, emergent codes led to the identification of additional elements and relationships between leadership, rural development, and disaster recovery. Findings revealed the extent to which leaders involved in disaster recovery perceive the relationship between local disaster leadership networks, leadership needs, and potential barriers to disaster recovery and environmental equity. Together, these findings begin to uncover the extent to which local leaders are able to influence transformational change in socially vulnerable communities that engenders ideas of climate change resilience and improves
connections through disaster recovery. Below, we describe the findings in relation to our research objectives and discuss opportunities to advance climate resilience through leadership-focused disaster-recovery policy implementation and, ultimately, climate resilience.

All respondents recognized that the experiences of Hurricane Matthew in 2016 led to changes in leadership processes that informed the response to Hurricane Florence in 2018. Yet the recency of their personal and professional experiences as disaster survivors tended to make distinctly separating their evaluation of leadership into two distinct experiences difficult unless catastrophic mismanagement led directly to significant changes in disaster response.

**Participants of the Rural Leadership System**

Thematic analysis of interview transcript data revealed the extent to which leaders involved in disaster recovery perceive the relationship between local disaster leadership networks, leadership needs, and potential barriers to disaster recovery and environmental equity. Together, these findings begin to uncover the extent to which local leaders are able to influence transformational change in socially vulnerable communities that engenders ideas of climate change resilience.

Emergent Community Organizers are described as the ‘backbone’ of rural recovery. Community Organizers are recognizable community members who utilize existing knowledge and relationships with community members to support immediate and facilitate long-term recovery efforts. Before FEMA, United Way, or state government assistance arrived in Robeson County, local leaders emerged in the form of volunteers, religious and tribal leaders, and community-level organizations. These individuals advocate for the well-being of their communities by working collaboratively with community-based organizations, and local and County commissioners, and by making appeals to their state and County governments. The
success of Community Organizers and the efficacy of their outcomes is a function of the strong relationships rooted in social capital and trust that these individuals have as members of the communities they serve.

Decision-makers are individuals who are titularly responsible to lead and support recovery efforts. Data shows that there is a perception of disconnectedness between these leaders and the communities they serve, and both Decision Makers and Community Organizers express a desire for collaboration. Because decision-makers are not always enmeshed with the norms of communities, they must effectively collaborate with Community Organizers to be successful in disaster recovery efforts. Community Organizers are more connected with and provide access to the needs, goals, and values of communities, which can inform decision-making and planning efforts.

Activists are the individuals within a community who have an expressed interest in specific societal and recovery outcomes and participate in local initiatives. These individuals do not participate in organizing behaviors that facilitate long-term change, but they do support and contribute their time and resources to the larger goals and objectives of the community.

**Emergent Themes in the Rural Disaster Recovery Leadership System**
Analysis of interview data revealed four key themes in the Robeson County disaster recovery leadership system: Actions, Relationships, Recognition, and Resources - categorized as parent nodes in NVivo 12 Pro. Notable subthemes are identified as child codes under their respective parent codes (figure 1) Detained definitions with exemplar text from interviews can be found in Appendix 1.

Figure 1. Themes and sub-themes used to explore the disaster recovery leadership system

Actions refers to the identified current or desirable behavioral characteristics of Community Organizers or Decision Makers identified by interview participants. Activists and Community Organizers, collectively referred to as ‘Community Leaders’, describe the need for communication and transparency in the recovery process as community members feel disengaged and uninformed of the decisions being made on their behalf. Inefficiencies in decision-making and implementation contribute to a greater perception of ineffective leadership,
as the immediate recovery needs of communities rely on fast, reliable outcomes. Participants note a disconnect between community members and decision-makers in the dissemination of climate and recovery-relevant information.

“People you think should know don’t know. And they don’t know who to ask. So, how were we supposed to find out? And, you know, that’s frustrating for people…” (JC071119)

“…we were astounded at the lack of information that that failed to be disseminated.” (SM031319)

Participants note the importance of developing meaningful relationships with communities as a means of achieving desirable outcomes in disaster recovery. Participants overwhelmingly assert that the development and maintenance of social capital between leaders and the communities they serve is paramount to successful disaster recovery. Social capital refers to features of social organization such as trust, norms, and networks that can improve societal outcomes by facilitating coordinated actions. Relations of trust also inspire cooperation and reciprocity between community members and the leaders and institutions that serve them (Avant et al., 2013; Valente 2014). Trust in the individuals who represent one’s needs in the decision-making process has the added benefit of increasing reciprocity between leaders and the communities they serve. Communication and collaboration are implicit in social capital, as leaders must effectively work alongside and incorporate the needs of communities in order to establish trust and accountability. Social capital is essential to successful community organizing; Community Organizers are trusted and reputable within the communities they serve because of their high levels of social participation and are held accountable for their actions as members of the community.
“They [Volunteers] are the heartbeat of it all. And especially for small communities, such as ours, you have our manager—we don’t have a big staff. So having the volunteers and to be able to rely on that was, was fantastic.” (CS050819)

“I’d say be sensitive to the people’s, to the people’s feelings and who, how they are. We have to get to know the people. You can’t, you can’t, uh, lead from a distance. You have to get to know the people.” (JJ070219)

The theme of recognition is a reference to recognitional justice - the acknowledgment, respect, and legitimization of the historic cultural, political, and socioeconomic differences of groups (Schlosberg, 2003). The recognition of historic and systemic challenges and inequities that face vulnerable and underrepresented communities is amplified by the physical and environmental devastation introduced by a flooding event. Community leaders state that low income and communities of color feel their needs are not being adequately addressed in the decision-making process, leading to inefficacy and distrust. Some interview participants attribute this inefficacy to the lack of representation of their groups or municipalities in governmental institutions - community members feel they do not have a relationship with decision-makers because they do not identify with the issues relevant to individual communities. By engaging and establishing social capital with traditionally underrepresented communities in the disaster recovery process, decision-makers are able to acknowledge and incorporate local and ancestral knowledge, values, and norms into the recovery process, encouraging sustainable practices within communities. Supporting and acknowledging group differentiation in resource distribution not only provides recognitional justice in the decision-making process, but also ensures increased social capital, efficiency, and efficacy in disaster recovery.
Resources refers to the materials, funding, technical assistance, and/or training necessary to facilitate successful recovery outcomes. All participants recognize the significant lack of resources as a significant barrier to achieving successful and sustainable recovery and building resilience for future storms. All leadership types acknowledge the need for additional financial assistance to support local grassroots recovery efforts and the creation of community-level resilience and recovery planning efforts - particularly those led by community leaders. To achieve these goals, community leaders state the need for technical training and community climate recovery education.

Relationships between themes and subthemes can be seen in figure 2. Subthemes were enlarged based on frequency to display relevance across all leaders. Code frequency and relationships between subthemes were used to answer the overall research objectives of this study.
Objective 1: Characteristics of the Current Robeson County Disaster Recovery Leadership System

The first research objective explores the manifestation of the local leadership system after Hurricane Matthew and Florence. The leadership system is described as the relationships and interactions between and among all forms of leaders and the level of effectiveness of their respective outcomes.

Most notably, successful disaster recovery outcomes were attributed to the emergence of community leaders during recovery. Community leaders refer to the non-titular community members who guide and provide resources for communities in the form of volunteers, religious and tribal leaders, and community-level organizations. Interview findings reveal that informal leaders are perceived as “the backbone of the community” during disaster recovery (SP062619);
while decision-makers - those who are titularly responsible to lead and support recovery efforts - are only viewed as figureheads, disengaged from communities.

“A lot of times people from communities that attend church or they stand out as far as doing positive things in the community are really the leaders. They're the leaders even more than the elected officials. A lot of times the elected official is a figurehead. They're a figurehead. They're not really the backbone of what is really going on. It's the people behind them that are pushing for certain issues and certain things to get done. And so you always have your, your unnamed or unmarked leader in the community that impacts because that person either helps a person morally or they help a person financially or, or instructionally, you know, in that way.” (PM061219)

One respondent described the “huge outpouring of community support” during the immediate recovery efforts while feeling abandoned by government organizations and being left “on [their] own for the first few days”. Many participants shared a sense of abandonment during the aftermath of each storm, stating that while decision-makers were able to incorporate lessons learned from the previous storm, their actions were largely inefficient, and only . Meanwhile, the support given by community leaders was perceived as steadfast, efficient, and effective in meeting the direct needs of community members.

“...there was not a day that went by that we didn’t have somebody knocking on our doors, wanting to give us and begging us to take food and everything. So, it was wonderful. The outpouring of concern, the giving, was just tremendous. It didn’t—it was not just our community here, but it was all the communities coming together, so it was people, we didn’t know, as well as those near and dear” (DCKC052519)
“Yeah, I don’t see any presence of them in our town. I had to put a message on Facebook and say, “Where are you? We need you. We’re working. We cold, we wet. You know, we need your help.” And then he comes, a county manager—I mean a commissioner—passing out toothbrushes and stuff. ‘We need you. We need more than just passing out toothbrushes.’” (ERP111319)

“But it took a while for the National Guard to set up and—And it took several days for them to start handing out water, canned food. Because we were all on our own for the first few days. It was every man for himself. Go find water. Go find food. And after Florence, it seemed like it was kind of the same way.” (AA040819)

Participants often acknowledge that community leaders are adept at forming relationships that rely on social capital to generate effective recovery outcomes. Social capital refers to features of social organization such as trust, norms, and networks that can improve societal outcomes by facilitating coordinated actions (Pretty & Smith, 2004). Recognizable community leaders with high social capital emerged as a consequence of shared experiences and the identification of recovery needs within the community as a whole. These individuals became fixtures in the leadership system amid distrust and perceptions of inefficiency in institutional leadership and were able to generate successful recovery outcomes as a result of their relationships with community members.

“They [Volunteers] are the heartbeat of it all. And especially for small communities, such as ours, you have our manager—we don’t have a big staff. So having the volunteers and to be able to rely on that was, was fantastic.” (CS050819).

Over half of all participants observed that in the immediate aftermath of the flooding event, there was a cohesive effect aligned with a shared experience of trauma. They recounted
that long-standing habits of segregation by race, ethnicity, and class seemed to become largely irrelevant, for a time. One participant describes the ability of this cohesion to prevail over the historic divisions of race and class:

“This community is willing to stand up in, in a time of crises and reach over boundary lines. Um, they didn’t care about race or anything else, they’re just willing to help their fellow neighbor, even 30 miles down the road, you know, recover from a storm.” (KB101019)

Our findings suggest that social capital is built and maintained by individuals rather than organizations. This reinforces survivor-focused recovery rather than jurisdictionally-focused recovery efforts. As community leaders develop, they become defacto recovery caseworkers and brokers of resilience: they are able to leverage existing relationships during disaster recovery to address long-term and large-scale social and biophysical dilemmas. Additionally, community leaders are perceived as uniquely qualified to recognize environmental injustice concerns because are in regular and consistent contact with impacted socially vulnerable communities.

“You got to hear people, you have to listen to what they're saying and see if it's actually feasible to go about it that way. Who's going to be impacted by it and how they going to be impacted.” (PM061219)

Community leaders describe the absence of communication and transparency from decision-makers in the recovery process as community members felt disengaged and uninformed of the decisions being made on their behalf. These individuals perceive a culture of inefficiency within recovery decisions, with 25% of the BRIDGE Builder subset participants noting redundancies between municipalities and resource waste during policy implementation. Participants below describe examples of inefficiencies in local governance:
“And I’m just gonna say that manager was just—he was bringing people in that we didn’t need. You had people here to work. Your workers could work. You had your town employees to do the things that we’re supposed to have done, like moving tree limbs and cleaning and making the roads safe. You had that. Well, he brought people in to do that. That was a lot of money that we wasted in that…” (ERP111319)

“because I think sometimes we duplicate [recovery actions], and there's no way to check that. So we don't stretch our resources as far as they could be.” (CS050819)

Finally, many participants indicated that, though there was a federal and state presence during the recovery process, state and federal disaster recovery agencies were unable to meet the needs of rural communities. Participants did not view federal assistance as a feasible or effective means of recovery. Often, the federal assistance that communities received was perceived to be impractical and efficient, exacerbating the compounding effects of a flooding event (USGCRP, 2018). This view was most strongly held among leaders who also were hurricane survivors:

“I think whether you got help from FEMA depended on economically where you were at. You can seem like you got money, but you don’t have money. And you don’t get any help. I don’t think FEMA helped people as much as a lot of folks act like…I don’t understand why there’s not a lot of assistance outside of FEMA. It’s like, you look on the state websites and the only thing they turn you to pretty much is FEMA.” (JC071119)

“FEMA denied a lot of people. They really did…. Same thing with SBA [Small Business Administration]. They denied a lot of people.”(AB102319)

“... you know, they bought food, but food that they couldn’t prepare because they were without power. Roads were closed down, stores were closed down…” (AB102319)
Objective 2: Unfilled characteristics of the Leadership System

The second research objective attempts to identify desirable actions, and contextual issues that are unaddressed by the current disaster recovery leadership system. This section focuses on factors interview participants perceived as essential gaps preventing holistic and robust disaster recovery and, ultimately, the development of long-term community resilience. Overall, findings reveal that the current leadership system in Robeson County struggles from relational gaps among leaders. These gaps limit (1) efforts toward solidarity and participation in communities, (2) trustworthy advocacy by institutional leaders, and (3) efforts to identify and amplify the knowledge of survivor-leaders whose deep work within communities could transform the credibility of institutional leaders’ actions and accountability.

Almost 20% of BRIDGE Builder subset participants discuss the need for a recognizable, trustworthy leadership presence during immediate storm recovery to adequately assess and meet the needs of communities during the decision-making process. Study participants overwhelmingly indicate that the development and maintenance of social capital is one of the most valuable resources in rural disaster recovery leadership. Relationships and the development of social capital create avenues for communication, transparency, and accountability between leaders and communities. Participants believe that the development of social capital and open lines of communication between decision-makers and community leaders can increase the efficacy of decision-making, resource distribution, and recovery efforts.

“I think you lead best by knowing what people think, feel, are doing. By understanding what’s happening. In order to do that, you’ve got to be out there. And you don’t need to just be out there with the folks that you’ve always been out there with.”

(JC071119)
“Because then you will have-, then you will know what actually needs to be put in place. Uh, you can’t just say, oh, well, this needs to be put in place because you really don’t know unless you get out in the community and ask the people, what do they think?” (VV100319)

Participants express the need for collaboration in the disaster recovery process. 20% of participants contribute institutional inefficiencies to a lack of vertical (ie. state to county to municipal to the community) and horizontal (ie municipality to municipality) collaboration.

Though participants note the cohesiveness and unity brought about by the shared experience of climatic impacts during immediate recovery, it was also stated that leaders were unable to capture and extend these experiences of solidarity in ways that seemed to indicate permanent shifts or transformation in local power dynamics.

“We have to respond to the need. And action happens better in groups. The more people—and it starts with—usually, not the lower tier, but the higher tier and feed it down to the lower—and feed it down to the lower tier, so it takes our leaders to come forth and say, ‘Listen. This is what’s happening. This is what we can do.’” (SM032719)

Respondents attributed the lack of collaboration to an inability of the current leadership system to create and sustain authentic relationships between leaders and survivors. This was expressed in two ways: ambivalent levels of trust that formal leaders are able to identify and fill community needs that stray beyond an organization’s explicit mission, and the need for disaster recovery to identify, amplify, and provide resources to movement-oriented community leaders.

“But if we remove money, because we always need money, but if we remove money, it's access. And I'll say access because maybe I just need a ride or someone to
interpret what I’m reading. Right? Maybe I don’t understand what FEMA is asking me. Maybe I just need someone to say—to just reassure what it is. Or when I call, when they say this, what does that mean. So that goes back to the human capital piece of meeting people where they are.” (CS050819)

Others express the need for a leadership presence in communities with a focus on the meaningful inclusion of socially vulnerable communities. These individuals would like to see an active presence of decision-makers in vulnerable communities, adequately communicating and providing communities with a voice in the decisions that affect them.

“And then we need to involve the residents of these impacted communities as equal partners in the disaster response and recovery process. And our government agencies, our non-profits and our churches are in total denial that these are communities that have impacted.” (ML060419)

Objective 3: Perceived barriers to effective rural disaster recovery leadership

The third objective of this study identifies the barriers that participants believe are preventing the implementation of effective disaster recovery processes which would enable disaster recovery and cultivate community resilience. Evidence demonstrates that these barriers can be broadly characterized as relational and recognition barriers. Relational barriers indicate the obstacles to the development of social capital, and access to the benefits that leadership relationships bring. The persistence of relational barriers breeds resentment and distrust between leaders and community members. The recognition of historic and systemic challenges and inequities that face vulnerable and underrepresented communities is amplified by the physical and environmental devastation introduced by a flooding event and can hinder the successful implementation of disaster recovery efforts. Relational and recognition barriers can undermine
the success of disaster recovery efforts and prevent “getting [resources] to the right hands for the people that really need it” (VV100319).

During the aftermath of large flooding events, subset participants agree that there was a significant lack of communication from institutional leaders. Communication of recovery initiatives and disaster planning efforts were not made available for communities that were significantly affected by the storms. This lack of communication reinforced the cycle of distrust among leaders. These barriers hinder the development of social capital and contribute to perceptions of ineffectiveness and ineffectiveness in local decision-making.

“So, if they go in and they don't say anything about our needs in the community, then they're not going to be met because that's our only voice in there. So, um, do I think that they've been doing their job well? Um, the evidence is saying no.” (TJ081419)

Interview participants present the under-representation and misrecognition of socially vulnerable communities as a barrier to effective decision-making, as the needs of these communities are not being adequately considered in the decision-making process. Responses indicated that the misrecognition of all stakeholders and the issues that affect them in state and federal practices and policies undermine community resilience and hinder the development of social capital. Moreover, the implementation of recovery initiatives without the consideration of socially vulnerable communities can reinforce the physical, social, and economic factors that hinder their ability to build resilience in the first place (Matin et al., 2018).

“I think as these decisions are being made to “prevent” flooding [in and along the Lumbee river] and things in other areas...But, really, thinking about how that could
affect another area. So, if we put a floodgate up here, what's it going to do to the people on other side of the river?” (LF052419)

“So, if they go in and they don't say anything about our needs in the community, then they're not going to be met because that's our only voice in there. So, um, do I think that they've [city government] been doing their job well? Um, the evidence is saying no.” (TJ081419)

Notably, the misrecognition of socially vulnerable populations perpetuates cycles of distrust from communities who hold deep ancestral and immutable connections to the land and waters. Because decision-makers do not have an active and recognizable presence in socially vulnerable communities, the voices of these communities are often stifled and underrepresented in county-wide mitigation and recovery efforts. Furthermore, socially vulnerable communities consider disaster recovery and resilience policies as an extension of a government that once actively sought to ignore their personhood (Jurjonas et al., 2020). One participant describes the disproportionate representation of socially vulnerable communities here:

“I would be naïve to say that race doesn't play a part in the decision-making process. I think that the worst part of that is not wanting to speak on it. And, and not saying there is equity. Right? You know, is there equality? You know, are all voices heard? No. We know that in the study of politics, what is power, you know, deciding who gets what, when, where, how. And so race does play a part in that.”(CS050819)

The social realities of the Robeson county population complicate narratives of recovery, as Lumbee territories in the county create additional layers of resources and authority. For example, Lumbee and other indigenous people of North Carolina hold important and
unsubstitutable ancestral connections linking them to the River and nearby wetlands (Emanuel, 2019). These historical and cultural ties to the land mean that mainstream disaster recovery solutions such as the Community Development Block Grant Disaster Recovery (CDBG-DR) home buyout programs are not feasible solutions for their communities, and other means of recovery engagement must be explored in order to adequately need the needs of these communities while ensuring the recognition of their cultural dynamics (Marson & Legerton, 2021).

*It’s a very unique community of people, but we’re the home of Lumbee’s. And that’s what makes us very unique. That’s what separates us from everyone else. We love the communities, we love the land, and we love the people. And this is the home of the first Native American University: University of North Carolina at Pembroke. And we’re very proud of that.*” (CS050819)

In addition, Robeson county is a “poor county” with a “small staff” and limited resources. Often, city and county employees are asked to serve in multiple roles year-round, so when a climate disaster occurs, city and county staff are asked to take on roles and responsibilities they are not necessarily prepared for or qualified to do. Because of this, recovery outcomes may in inefficient or ineffective, as government officials and newly appointed “coordinators” do not have sufficient training in disaster management.

*“It is because, I mean, folk just—it’s so much going on for the little—and I’m not making excuses; this is just real talk—but the little staff that we’re working with, it’s just almost overwhelming, to say the least.”* (PM081219)
“And also…I’m a new employee at DSS and I just happened to land in the shelter a coordinator, and I didn’t get to go through that training, [a] handbook would help me, though” (LF052419)

Finally, respondents referred to economically and environmentally motivated out-migration as prevailing concerns that were exacerbated by disaster experiences. One participant noted that the out-migration of active community members hinders the formation of community organizers to advocate for and work with communities.

“And if no one stays or there's a lack of participation of being engaged, then when our seasoned citizens' transition, who's going to carry on?” (CS050819)

DISCUSSION

The role of leadership in rural communities has been noted, yet under-studied in disaster recovery research (Nakagawa & Shaw, 2004; Beer, 2014; Gutierrez & Provost, 2016). The results of this study illustrate the importance of emergent community-level leadership in resource distribution, community building, advocacy, and the development of local disaster recovery and resilience initiatives in rural communities. When considered separately from governance, community-level leadership breaks down barriers of power and allows for the reciprocal exchange of knowledge and resources for the development of effective solutions which support recovery efforts and increase local-level capacity for resilience.

Hierarchical and isolationist disaster recovery governance practices impede local collaboration and relationship development. Participants describe current disaster recovery leadership as ineffective, isolationist, and lacking in community participation and recognition of community needs, values, and norms. This limits the participation of residents, community
organizers, activists, and grassroots organizations in the decision-making process and reinforces the inequitable distribution of technical assistance and resources; leaving the most vulnerable and traditionally marginalized communities to initiate their own planning and recovery efforts without the necessary resources for sustainable resilience (Keyim 2018, Gibson, 2019). Participants express a sense of distrust and doubt about the capacity of local governments to effectively meet the immediate and long-term needs of communities. The perpetuation of disconnected, hierarchal governance hinders social capital and relationship development and ultimately leads to perceptions of institutional ineffectiveness.

**We find that social capital between leaders and the communities they serve is essential to the overall success of the disaster recovery system.** Participants overwhelmingly state the necessity of relationship building between community leaders and decision-makers to achieve effective and equitable recovery outcomes. Community organizers, as members of the community, are able to represent the needs of communities and advocate for overall community well-being as the outcomes of recovery directly affect the leaders themselves. Social capital as a relational tool is self-reinforcing, as successful recovery outcomes yield increased trust and collaboration between communities and leaders (Nakagawa & Shaw, 2004). Collaboration activities in rural communities allow institutional actors in the governance process to evaluate and incorporate the needs, values, and norms of communities into policy implementation (Keyim, 2018). By taking a top-down approach to disaster recovery, governments silence the voices of community organizers and activists on the ground who are enmeshed in community issues and needs and are “the backbone of the community” (SP062619).

Evidence in this study demonstrates and lends support to arguments that top-down governance itself is not enough to achieve successful disaster recovery goals in rural
communities (Valente et al., 2015; Beer, 2014). While impactful in theory, traditional methods of recovery governance only address the coordinated institutional actions taken to mitigate climate impacts while neglecting the multi-faceted nature of the rural leadership system. Projects rooted in hierarchical governance systems and disseminated by powerful government actors to less powerful local actors lack social participation and support that facilitates community ownership and fails to address the greater societal and cultural issues at hand, making ground-level implementation ultimately unsuccessful (Davies, 2009; Tate et al., 2021; Shreve, 2015; von de Porten et al., 2015).

Findings in this study indicate that the most significant differentiation between traditional monocentric governance systems and community-based leadership discussed in this paper is the relationships between leaders and the communities they serve. These relationships can serve as a unifying force during a disaster, and provide opportunities for increased recognition, efficacy in decision-making, and resource distribution.

Thus, it is particularly important to assess the needs of rural communities and provide rural leaders with the resources (technical, funding, educational, etc.) necessary to recover from immediate threats and develop long-term resilience strategies that can be integrated into the rural socio-political landscape (Davies, 2009). Overall, recovery decision-making for rural communities must strengthen social bonds, encourage autonomy, and increase resilience for the next disaster.

Limitations in Research

Disaster recovery leadership was not the only topic discussed in Project BRIDGE interview protocol, nor was it the primary goal of the interviews overall, therefore some attitudes and deeper perspectives of the local leadership system may have been omitted from the interview.
transcripts. This study attempts to mitigate this variance by prioritizing the perspectives of those identified as leaders by the research team at the time of the interview.

The interviews included in this study were conducted in person prior to the COVID-19 pandemic. While the socio-political landscape of Robeson County may have changed with the effects of the pandemic, we retain the relevance of our findings and the need for inclusive leadership practices in rural disaster recovery.

By nature of the unique referral participant sampling process utilized in this study, the important perspective of Lumbee tribal leaders is missing from the Robeson county leadership landscape in this study. Lumbee tribal leaders are mentioned as fixtures in Robeson county. Although many tribal members were included in the sample of leaders, none were members of tribal government.

**CONCLUSIONS AND RECOMMENDATIONS**

The analysis conducted in this study is particularly relevant to rural community engagement in Robeson County, but the lessons learned can be applicable to rural engagement across North Carolina. In the context of rural disaster recovery, state and county governments must work collaboratively with members of the community to identify recovery needs and formulate solutions that strengthen bonds within communities, encourage autonomy, and build resilience for the next disaster. Relationship building with local-level community leaders allows local and county decision-makers to meet the needs of communities and effectively distribute resources in a timely manner to communities. It is important that local-level community leaders are included in the recovery decision-making process to advocate for the expressed and implicit needs of their communities. The active inclusion of community leaders in disaster recovery
governance allows for the creation and implementation of effective and efficient solutions across leadership scales.

We recommend that county and state governments incorporate collaborative governance practices as a standard means of rural disaster recovery and engagement. Decision-making that supports and incentivizes the active participation of rural stakeholders entrusts community members to steer the decision-making process in a way that represents their needs and promotes community strength and autonomy - giving communities the resources they need to develop local recovery and resilience planning efforts that fit their needs, rather than ascribing “one size fits all” approaches to disaster recovery (Fischer, 2012). The meaningful collaboration with community organizers and activists in rural disaster recovery decision-making allows for the reciprocal exchange of knowledge and resources, as community leaders provide institutional leadership across scales with the local knowledge and access to the needs, values, and norms of the communities they serve; this information increases the efficacy and efficiency of decision-making and fosters communication and trust between communities and decision-makers (Jensen & Ong, 2020). For this reason, effective decision-making must incorporate the voices of and acknowledge the diverse needs of rural communities.

We also recommend that city and county governments attempting to address rural disaster recovery recognize and encourage present community organizers and incentivize the emergence of community leadership in different sectors by providing the necessary training, resources, and accessibility to relevant disaster recovery information. While this study establishes community leadership and organizing as a key asset in rural disaster recovery, the emergence of community-level leaders is not guaranteed in all communities; Decision-makers have a responsibility to seek out and work with active local leaders to develop long-term
initiatives that increase community autonomy by giving them the resources necessary to support local and community-level disaster recovery efforts. Resources recommended by participants in this study include

- Accessible grant funding for community-facing recovery projects,
- Transparent access to recovery initiatives that will directly affect communities,
- Technical assistance in grant writing and project management,
- Access to climate change educational resources, etc.

While participation and social capital are necessary for successful community leaders, sustained leadership often requires intentional promotion to achieve long-term goals in the governance process (Murray & Dunn, 1996; Jonix et al., 2016). These resources facilitate successful community organizing and reciprocal and transparent communication of community needs and government actions and limitations which can contribute to effective disaster recovery outcomes. Providing access to information, training, and financial resources in local disaster recovery encourages community-level leaders to take on the responsibility of leadership and allows these individuals to confidently advocate for the needs of their followers.

Further work in rural disaster recovery leadership must apply the principles of social capital, trust, and local leadership in the development of a participatory framework for the meaningful inclusion of diverse communities in disaster recovery decision-making.

**North Carolina Specific Policy Implications**

The North Carolina state legislature has noted the importance of incorporating local knowledge and community goals into flood and watershed mitigation efforts to be initiated by NCORR (HB500). This practice should be extended to all aspects of NCORR’s community-facing operations, such as the implementation of the Resilient Communities Program (NC Office
of Recovery and Resiliency, 2022). **We recommend that NCORR program development take a “communities first” approach to disaster recovery and resilience.** NCORR should consider changing its operational procedures to include community-centered meetings prior to project implementation in affected communities to allow community members and organizers to express their direct needs and provide feedback on recovery and resilience planning efforts.

“...when you have that type of collaboration, it’s amazing the resources that you bring together and are able to use for our citizens.” (KB101019)

Opportunities for engagement should be easily accessible by community members who may be unfamiliar with the traditional state government public comment format. By actively engaging with communities in the disaster recovery process, state agencies will be able to effectively identify the immediate and long-term needs of communities and ensures the consideration of recognitional and relational barriers in local implementation.

**Throughout project development, NCORR must communicate clear and transparent objectives, limitations, and decisions to affected communities; and should consider establishing standard protocols to effectively and consistently engage with communities prior to and throughout project implementation.** Widespread visibility of project goals, updates, and limitations allows for broader community acceptance and encourages the emergence of community leaders for projects and programs that are relevant to their respective needs (Davies, 2009). By creating an accessible database with active projects made visible to the broader community, NCORR must establish a trustworthy presence in traditionally underserved communities to gain community buy-in for local projects.

“I would say, yes. Transparency. I would say get out in communities more. I would tell the leaders that they need to listen. I would tell them that sometimes you need
to pause before you move forward. Figure out what’s going on. I would say, don’t promise things you can’t deliver on.” (JC071119)

State agencies must consider providing resources to community leaders to encourage community autonomy and capacity building. Rural leaders express a desire to implement local-level resilience planning and recovery procedures. To do this, state agencies must provide technical training in areas such as grant writing, project management, and mapping interpretation, among others. NCORR has created the North Carolina Flood Risk Information System (FDIS), an open-source geospatial database that contains flood hazard data, models, maps, and risk assessments for public use. While this resource is valuable to the implementation of long-term local resilience efforts, rural leaders and decision-makers may not have the technical knowledge necessary to interpret this information. Further, rural leaders may not have experience implementing climate resilience programs or applying for grants to fund prospective projects. In order to ensure utilization of provided resources and incorporation of these resources into rural planning, NCORR must also provide comprehensive training in an accessible manner for community leaders and decision-makers.

“Robeson County has a long way to go to recover, for recovery. And take time to look at the communities and keep fighting for the resources that we need...because we got a long way to go.” (DCKC052519)
REFERENCES


https://doi.org/10.1142/s2010007819500040.


https://doi.org.prox.lib.ncsu.edu/10.1093/sf/soab059


https://doi.org/10.1016/j.gloenvcha.2010.07.004


APPENDICES
Interview Format: This is a semi-structured interview where the participant will tell a guided story of their experience with disaster, their vision for a sustainable future, and the pathways that need to be cleared in order to move from here to there. The Community Voice Method uses a format that includes four sections: (1) orientation, (2) complication, (3) result, and (4) coda.

Questions and prompts offer different entry points and cues for interviewers. Probe areas remind you what themes to ask people to talk about in more detail when they come up.

You should let the interview participant do most of the talking and use the high-level questions as “guideposts” to move through the interview. You don’t have to ask them in the order, but you should ask them all by the end of the interview. You do not have to ask the sub-questions. They are there to help you draw people out of their shells if you need them.

Probe areas:
• Resilience
• Vulnerability
• Hazards
• Health concerns
• Knowledge (environmental science)
• Role of the government
• Environmental justice

Get permission to start recording in writing. Ask participants to: Please state your name, today’s date, and that we have permission to record. If you want to stop or pause recording at any time, we can.

Orientation: Connection to Place
• Tell us a little about yourself and your background (occupation, education, age, family, etc.)
  o How long have you lived or worked in the area?
  o What brought you to the area? What keeps you here?
• What makes this area special or unique to you?
  o What do you value most about living and working here?
  o What do you value most about the natural environment?
  o How would you describe the culture of [your community/Robeson County] to an outsider?
• A lot of people say that racial diversity is one of the really unique aspects of Robeson County. What has your experience been like living in such a racially and ethnically diverse place? What ways do you think race matters or doesn't matter in the community?

Complication: Changes Taking Place

• Tell me about your experience with Hurricane Dorian.
  o How well did you feel prepared?
  o How well was the local government prepared?

• Can you describe in as much detail as possible your experience with Matthew and Florence?
  o Where were you during the storm? Who were you with? How did you prepare?
  o How were you and your family personally affected?
  o What, if anything, are you still doing to recover from the storms?

• After each hurricane, how did the community respond?
  o How was the reaction different after Florence compared to Matthew?
  o What would you like to see more of?
  o What help did you need?
  o What help were you able to offer others?

• We’re also interested in learning about how the local environment has changed as a result of the storms. Can you think of any land or water bodies in the area that became damaged or degraded because of the hurricanes?
  o Have you noticed any changes in land, water, or air quality?
  o What about new smells, sounds, or wildlife?
  o Have your outdoor activities changed at all since the hurricane? How so? [recreation, gardening, sports, playgrounds]
  o What other environmental concerns do you have?
  o What health concerns do you have related to the disaster?
    ▪ For example, some people have talked about mold, concerns about drinking water quality, or toxins and waste in the floodwaters.

Some people think climate change is relevant to the recent hurricane damage in this area. What is your opinion?

Results: Impact of Change

I want to transition now to talk about how well the community has been able to recover from the hurricanes.
- In what ways did [this region] seem to “bounce back” after each hurricane?
  - What part of the recovery has been hardest for people? Have they struggled the most financially, emotionally, socially?
  - Who has struggled the most to recover? Is everyone doing about the same or have some groups and areas been left behind?
  - What was different about the recovery after Florence compared to Matthew – Has it been better or worse?
  - In what ways do you think the community is still recovering?
  - What gives you the most hope for the community looking forward?
  - What worries do you have when thinking about recovery or the possibility of future disasters?

- Overall, how do you think the disaster experiences have affected the community’s well-being and ability to get things done?
  - [Community Cohesion] What is the level of community cohesion like? Do you think the community is more or less “tight-knit” than before the storms?
  - [Economic] How is the local economy doing? Were any jobs or businesses lost because of the hurricane that didn’t come back?
    - In general, are people better or worse off than before the storms?
  - [Social disparity] Has the gap between the “haves” and the “have-nots” become larger or smaller since the hurricanes?
  - [Natural Resources] Do people seem any more aware of the natural resources within the community? Do they value them more?
  - [Environmental Planning] Do you think the hurricanes have prompted any new environmental policies?
  - What do you think makes the community vulnerable to disasters? Is it just about geography and climate, or do social and economic factors play a role as well?

Who are the leaders in the community who can really make a difference? Who drives change?
- (probe: positive versus negative change drivers, probe: individuals or organizations)
- Do you feel like you have a voice in decisions that affect the community?

What kinds of things have local, state, and federal government agencies done to help with:
- Environmental issues following the hurricane?
- Economic issues following the hurricane?
- Social issues following the hurricane?
Coda: Visions for the Future

- Overall, what do you hope will happen to this area in the future?
  - What does Robeson County look like in 5 years? 10 years? 50 years?
  - What would you like to see accomplished during the community’s long-term recovery?
  - If money was no object, what would you do to brighten the future of Robeson County?

- What will it take to get from what you expect to see to what you would like to see?
- Is there anything that you would like community leaders to know?
- Is there anything that you would like to ask community leaders?
- What do you hope to learn by watching videos of other people in your community sharing their experiences with disaster and visions for recovery?

Wrap Up Questions

- Is there anything else we need to know or you would like to add?
- [Ask Audio Visual Lead if they had any additional questions or follow ups]
- Are there any flooding pictures or videos you’d like to share? [Need permissions for this]
- Is there anyone else we should talk to?
## APPENDIX B: BRIDGEBUILDER CODEBOOK

<table>
<thead>
<tr>
<th>NAME</th>
<th>DESCRIPTION</th>
<th>PROOF QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions</td>
<td>Process by which a leader - either as an individual or an organization - creates an achievable set of mutually agreed upon goals and actions through the mobilization of a larger group or community.</td>
<td>“And everybody’s got to work together when—I mean, everybody’s pulling in different directions, it’s just, it’s a no-win situation for anybody. You know, it’s a, it’s a no win.” (DCKC052519)</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Inclusion of a wide range of stakeholders contributing to a cohesive organization and a shared sense of direction.</td>
<td>I think you lead best by knowing what people think, feel, are doing. By understanding what’s happening. In order to do that, you’ve got to be out there. And you don’t need to just be out there with the folks that you’ve always been out there with.”(JC071119)</td>
</tr>
<tr>
<td>Communication</td>
<td>The capacity to articulate common goals and align these goals with clear actions through collaborative dialogue between actors.</td>
<td>“Yeah, I don’t see any presence of them [county government] in our town. I had to put a message on Facebook and say, ‘Where are you? We need you. We’re working. We cold, we wet. You know, we need your help.’ And then he comes, a county manager—I mean a commissioner—passing out toothbrushes and stuff. “We need you. We need more than just passing out toothbrushes.” (ERP111319)</td>
</tr>
<tr>
<td>Efficacy</td>
<td>The capacity of a government or an organization to produce desired results of an organization or a system.</td>
<td>“When Matthew came, you know, because of the leadership we had, he didn’t know what he was doing either. And I’m just gonna say that manager was just—he was bringing people in that we didn’t need. You had people here to work. Your workers could work. You had your town employees to do the things that we’re supposed to have done, like moving tree limbs and cleaning and making the roads safe. You had that. Well, he brought people in to do that. That</td>
</tr>
<tr>
<td>Efficiency</td>
<td>The capacity of governments or organizations to use resources efficiently and minimize unnecessary effort.</td>
<td></td>
</tr>
<tr>
<td>Status Quo</td>
<td>Maintaining the existing state of being - hierarchies, performance, and ideologies - within a community</td>
<td>“Be bold. Don't be worried about what may happen and try to find some new and fresh and innovative ideas to build the community and I think—especially for small Southern towns, people don't like change” (SB042819)</td>
</tr>
<tr>
<td>Transparency</td>
<td>Clear articulation of government decisions, goals, actions, and limitations</td>
<td>“I think there needs to be more transparency in government. I really do. I think that is a key to all of this. People need to know what's happening and I don't feel like people do.” (JC071119)</td>
</tr>
<tr>
<td>Recognition</td>
<td>Recognition of the struggles: social, political, financial, or otherwise which affect local communities' ability to adapt and recover from climate impacts</td>
<td></td>
</tr>
<tr>
<td>Brain Drain</td>
<td>Decreasing population in the rural community due to climate concerns, lack of opportunities</td>
<td>“I don’t see the [wealth] gap closing. Honestly, part of me feels like Robeson county is going to lose more people. More people are going to leave. When kids get out of high school, they're not coming back.” (JC071119)</td>
</tr>
<tr>
<td>Environmental Justice</td>
<td>The fair inclusion and distribution of resources to all people regardless of race, color, national origin, or income</td>
<td>“I think as these decisions are being made to &quot;prevent&quot; flooding and things in other areas and I think that they are doing this and planning in another, in the other departments that are responsible for these things in place. But, really, thinking about how that could affect another area. So, if we put a floodgate up here, what's it going to do to the people on other side of the river?” (LF052419)</td>
</tr>
</tbody>
</table>
| Representation | Creating environments where communities feel that they have a voice in the decision-making process by ensuring that those who are making decisions adequately reflect the community being served. | “As diverse as Robeson county is, you don’t really see but one—you know, people call it the tri, tri-racial, you only see one part of that tri that's had a good relationship with the Federal Government, so it would make sense here that people would expect to see
<p>| <strong>Relationships</strong> | Forming meaningful bonds with communities to encourage followership | more from local governments and officials that look more like us.” (DCKC052519) |
| <strong>Participation</strong> | Active participation of diverse stakeholders in community-level recovery efforts | We have to get to know the people. You can’t, you can’t, uh, lead from a distance. You have to get to know the people. That’s one of the best things you can do. If you, you get to know people, you want, you want to do things for people. You want to help. When you get to know people. So, that what I would say to the leaders. (JJ070219) |
| <strong>Organizing</strong> | Community members utilizing existing knowledge and relationships to initiate and support immediate and long-term recovery efforts. | A lot of times people from communities that attend church or they stand out as far as doing positive things in the community are really the leaders. They’re the leaders even more than the elected officials. A lot of times the elected official is a figurehead. They’re a figurehead. They’re not really the backbone of what is really going on. It’s the people behind them that are pushing for certain issues and certain things to get done. And so you always have your, your unnamed or unmarked leader in the community that impacts because that person either helps a person morally or they help a person financially or, or instructionally, you know, in that way. (PM061219) |
| <strong>Social Capital</strong> | Social capital refers to features of social organization, such as trust, norms and networks that can improve societal outcomes by facilitating coordinated actions | “I think you lead best by knowing what people think, feel, are doing. By understanding what’s happening. In order to do that, you’ve got to be out there. And you don’t need to just be out there with the folks that you’ve always been out there with.” (JC071119) |
| <strong>Resources</strong> | Funding, materials, technical assistance, and/or training that can be utilized by individuals or organizations to better recover and build resilience. | |</p>
<table>
<thead>
<tr>
<th><strong>Education</strong></th>
<th>Providing climate and resilience planning educational resources and training to local communities in order to encourage local resilience</th>
<th>“I think when people are educated and they at least know, okay, there’s a, a formulated plan, you know, of some sort, someone has thought about it, they put something in place. It gives them a little more comfort, you know, than being stuck on a roof and not knowing what’s going to happen.” (KB101019)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Funding</strong></td>
<td>Financial assistance provided to grassroots efforts and local residents for climate recovery and resilience</td>
<td>“I feel like Robeson County don’t have enough resources. Or is enough resources, but it’s not getting to the right hands for people that really need it.” (VV100319)</td>
</tr>
<tr>
<td><strong>Planning</strong></td>
<td>Learning from past stresses and shocks and working to implement creative solutions that will allow communities to recover and build resilience</td>
<td>“I think we need to do more consolidation and that’s on all grounds, various different things. And just have a plan, a, a—just have an articulated plan when we develop these areas or build back in these areas, um, and just a thoughtful process of how we rebuild.” (KB101019)</td>
</tr>
</tbody>
</table>
APPENDIX C: IRB APPROVAL

NORTH CAROLINA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD FOR THE USE OF HUMAN SUBJECTS IN RESEARCH
SUBMISSION FOR NEW STUDIES

Protocol Number 11846

Project Title
Building Resilience and Innovation through Diverse Group Engagement (BRIDGE)

IRB File Number:

Original Approval Date:
07/16/2017

Approval Period
07/16/2017 -

Source of funding (if externally funded, enter PINS or RADAR number of funding proposal via 'Add New Sponsored Project Record' button below):

NCSU Faculty point of contact for this protocol:NB: only this person has authority to submit the protocol
Cutts, Bethany Brooke: Parks, Recreation & Tourism Management

Does any investigator associated with this project have a significant financial interest in, or other conflict of interest involving, the sponsor of this project? (Answer No if this project is not sponsored)
No

Is this conflict managed with a written management plan, and is the management plan being properly followed?
No

Preliminary Review Determination

Category:
Exempt b.2

In lay language, provide a brief synopsis of the study (limit text to 1500 characters)
Researchers will conduct a series of video-based interviews with residents, volunteers, and agency officials involved in Hurricane Matthew disaster response and recovery. The purpose is to understand how people are working to make their community stronger and more sustainable after such a disruptive disaster. Our objective is to identify opportunities and barriers to create innovative solutions to social, environmental, and economic challenges that the community might not have been inspired to address had it not been for the Hurricane and subsequent need to rebuild. To accomplish this, we will use video-based interview methods and mapping. These anticipate that these products will be used by community partners to inspire deeper discussion.

Briefly describe in lay language the purpose of the proposed research and why it is important.
The purpose of the study is to understand why some communities are able to recover from disasters such as floods in ways that improve quality of life for residents while others do not. The goal of the interviews is to use this knowledge to encourage planning that will help transform the community in desirable ways and to answer basic social science questions about the nature of engagement, innovation, resilience, and sustainability.

My research qualifies for Exemption. Exempt research is minimal risk and must fit into the categories b.1 - b.6 found here:
http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html

Is this research being conducted by a student?
No
Is this research for a thesis?
No

Is this research for a dissertation?
No

Is this independent research?
No

Is this research for a course?
No

Do you currently intend to use the data for any purpose beyond the fulfillment of the class assignment?
No

Please explain

If so, please explain

If you anticipate additional NCSU-affiliated investigators (other than those listed on the Title tab) may be involved in this research, list them here indicating their name and department.

Will the investigators be collaborating with researchers at any institutions or organizations outside of NC State?
No

List collaborating institutions and describe the nature of the collaboration

What is NCSU's role in this research?

Describe funding flow, if any (e.g. subcontractors)

Is this international research?
No

Identify the countries involved in this research

An IRB equivalent review for local and cultural context may be necessary for this study. Can you recommend consultants with cultural expertise who may be willing to provide this review?

Adults 18 - 64 in the general population?
Yes

NCSU students, faculty or staff?
No

Adults age 65 and older?
No

Minors (under age 18--be sure to include provision for parental consent and/or child assent)?
No

List ages or age range:

Could any of the children be "Wards of the State" (a child whose welfare is the responsibility of the state or other agency, institution, or entity)? No

Please explain:

Prisoners (any individual involuntarily confined or detained in a penal institution -- can be detained pending arraignment, trial or sentencing)? No
Pregnant women?
No
Are pregnant women the primary population or focus for this research?
No
Provide rationale for why they are the focus population and describe the risks associated with their involvement as participants

Fetuses?
No
Students?
No
Does the research involve normal educational practices?
No
Is the research being conducted in an accepted educational setting?
No
Are participants in a class taught by the principal investigator?
No
Are the research activities part of the required course requirements?
No
Will course credit be offered to participants?
No
Amount of credit?
No
If class credit will be given, list the amount and alternative ways to earn the same amount of credit. Note: the time it takes to gain the same amount of credit by the alternate means should be commensurate with the study task(s)

How will permission to conduct research be obtained from the school or district?

Will you utilize private academic records?
No
Explain the procedures and document permission for accessing these records.

Employees?
No
Describe where (in the workplace, out of the workplace) activities will be conducted.

From whom and how will permission to conduct research on the employees be obtained?

How will potential participants be approached and informed about the research so as to reduce any perceived coercion to participate?

Is the employer involved in the research activities in any way?
No
Please explain:

Will the employer receive any results from the research activities (i.e. reports, recommendations, etc.)?
No
Please explain. How will employee identities be protected in reports provided to employers?
Impaired decision making capacity/Legally incompetent? 
No

How will competency be assessed and from whom will you obtain consent?

Mental/emotional/developmental/psychiatric challenges?
No

Identify the challenge and explain the unique risks for this population.

Describe any special provisions necessary for consent and other study activities (e.g., legal guardian for those unable to consent).

People with physical challenges?
No

Identify the challenge and explain the unique risks for this population.

Describe any special provisions necessary for working with this population (e.g., witnesses for the visually impaired).

Economically or educationally disadvantaged?
No

Racial, ethnic, religious and/or other minorities?
No

Non-English speakers?
No

Describe the procedures used to overcome any language barrier.

Will a translator be used?
No

Provide information about the translator (who they are, relation to the community, why you have selected them for use, confidentiality measures being utilized).

Explain the necessity for the use of the vulnerable populations listed.

We will take care to represent underrepresented voices (for example, economically disadvantaged populations and racial and ethnic minorities, but they are not specifically targeted.
State how, where, when, and by whom consent will be obtained from each participant group. Identify the type of consent (e.g., written, verbal, electronic, etc.). Label and submit all consent forms.

Participant groups include: (a) hurricane survivors and other residents (b) political officials and government employees, (c) non governmental organization employees, (d) planning professionals and (e) community organizers. All participants will receive basic information about the study and the uses of the research at two times: through an initial recruitment information delivered through mail, email, telephone, print, and/or in person. We will obtain consent to participate prior to initiating data collection. This will be provided in person as a document that the participant will sign for us to keep on file and will receive a copy to keep for their own records.

Interviews:
How: In writing
Where: Location of interview
(participant’s office, public space)
When: Immediately prior to the interview
By whom: By researcher
Type of consent: Written
Additional permissions: Audio and Video release
The information in the study records will be kept confidential to the full extent allowed by law. Data will be stored securely on a password protected server. Paper copies will be stored in a locked office. No reference will be made in oral or written scholarly reports that could link you to the study unless they consent to be identified by name. If participants choose to allow it, their name and likeness will be shared publicly along with the video-taped responses. Potential participants are welcome and encouraged to participate even if they do not consent to being video and audio recorded or do not want the recordings used publicly.

If any participants are minors, describe the process for obtaining parental consent and minor's assent (minor's agreement to participate). N/A

Are you applying for a waiver of the requirement for consent (no consent information of any kind provided to participants) for any participant group(s) in your study? No

Describe the procedures and/participant group for which you are applying for a waiver, and justify why this waiver is needed and consent is not feasible.

Are you applying for an alteration (exclusion of one or more of the specific required elements) of consent for any participant group(s) in your study? No

Identify which required elements of consent you are altering, describe the participant group(s) for which this waiver will apply, and justify why this waiver is needed.

Are you applying for a waiver of signed consent (consent information is provided, but participant signatures are not collected)? A waiver of signed consent may be granted only if: The research involves no more than minimal riskThe research involves no procedures for which consent is normally required outside of the research context.

No

Would a signed consent document be the only document or record linking the participant to the research? No

Is there any deception of the human subjects involved in this study? No

Describe why deception is necessary and describe the debriefing procedures. Does the deception require a waiver or alteration of informed consent information? Describe debriefing and/or disclosure procedures and submit materials for review. Are participants given the option to destroy their data if they do not want to be a part the study after disclosure?

For each participant group please indicate how many individuals from that group will be involved in the research. Estimates or ranges of the number of participants are acceptable. Please be aware that participant numbers may affect study risk. If your participation totals differ by 10% from what was originally approved, notify the IRB.

Interview participants ages 30 to 100.

How will potential participants be found and selected for inclusion in the study?

We will use a combination of purposive and convenience sampling to reach a diverse array of participants using online communities and newsletters likely to reach key sub-groups of stakeholders as well as recruitment at community events and gatherings relevant to Hurricane Recovery. To opt-in, participants will be over 18 years old and self-identify as interested in sharing their perspectives on recovery from Hurricane Matthew.

For each participant group, how will potential participants be approached about the research and invited to participate? Please upload necessary scripts, templates, talking points, flyers, blurbs, and announcements.

All participants will receive basic information through initial recruitment information delivered through mail, email, telephone, print, social media, and/or in person.

Cutts eIRB# recruitment_scripts
Cutts eIRB# recruitment_flyers

Describe any inclusion and exclusion criteria for your participants and describe why those criteria are necessary (If your study concentrates on a particular population, you do not need to repeat your description of that population here.)

Candidate participants will be excluded if they are under 18 years old or do not identify as having experience relevant to Hurricane Matthew's impacts in North Carolina.

Is there any relationship between researcher and participants - such as teacher/student; employer/employee? No

What is the justification for using this participant group instead of an unrelated participant group? Please outline the steps taken to mitigate this relationship.
Describe any risks associated with conducting your research with a related participant group.

Describe how this relationship will be managed to reduce risk during the research.

How will risks to confidentiality be managed?

Address any concerns regarding data quality (e.g. non-candid responses) that could result from this relationship.

In the following questions describe in lay terms all study procedures that will be experienced by each group of participants in this study. For each group of participants in your study, provide a step-by-step description of what they will experience from beginning to end of the study activities. **Interviews:** Participants will receive written, telephone, and/or in-person invitations to participate in the study that will explain that the purpose of the study. Participants will be contacted by the research staff to set up a telephone or in-person interview at the time of his or her choosing and at a mutually agreeable location. The interviewer will reiterate the purpose of the study and getting consent to participate and to also either be voice recorded or not, and video recorded or not.

Then, the interviewer will ask a series of open-ended questions in a semi-structured format in order to establish the participant’s experience with Hurricane Matthew, involvement and actions during recovery so far, and ideas about how recovery might be used to transition their town toward a more sustainable future. Questions will ask about what that future, more sustainable state looks like and what the major barriers may be to getting there.

After 1-3 hours, we will end the interview and thank the participant for their time. We will give them the timeline for next steps in the research process, which includes opportunities to review any recorded footage before it is used in public settings. They will receive information about how they can stay abreast of our research developments, should they choose.

After ending the interview, we will provide interview participants with a copy of the transcript, any maps or drawings created, and the audio recording if they agreed to be recorded. If they have not agreed to be recorded, we will send them a copy of our notes from the interview. Responses will be returned in a manner deemed acceptable to the respondent (encrypted email file, US post, or in-person exchange). This is part of member-checking to assure the credibility and validity of the data. The files will be de-identified (although being sent to a known person). These individual responses will be aggregated and anonymized in any public presentation of the results.

Describe how, where, when, and by whom data will be collected.

How: Notes, audio, and video recording

Where: Location of interview

(participant’s office, public space, participant’s home)

When: ASAP – August 2021.

By Whom: By researcher on protocol

Social?
No

Psychological?
Yes

Financial/Employability?
No

Legal?
No

Physical?
No

Academic?
No
Employment?
No
Financial?
No
Medical?
No
Private Behavior?
No
Economic Status?
No
Sexual Issues?
No
Religious Issues/Beliefs?
No

Describe the nature and degree of risk that this study poses. Describe the steps taken to minimize these risks. You CANNOT leave this blank, say 'N/A', none' or 'no risks'. You can say "There is minimal risk associated with this research."

Experiences with Hurricane-related disasters can lead to losses of property, income, and life. As such, the experience of re-telling these events may be either traumatic or therapeutic. We will include in our introduction of the study and explanation of risks and benefits a warning and a reminder that participation is voluntary and can be stopped at anytime. We intentionally waited over nine months between the end of the Hurricane and the proposed beginning of interview recruitment to avoid the chances of re-traumatizing participants. Some participants may decide to complete the interview of survey in a public location, we do not believe that there is a risk associated with participation in public. Should potential participants anticipate a risk, we can make arrangements to complete the data collection activity privately. There is a chance that the research may become riskier through the recovery process (if, for example, there is a second disaster). Should that happen, we will reevaluate the ethics of continuing research as well as our approach to data collection and recruitment.

If you are accessing private records, describe how you are gaining access to these records, what information you need from the records, and how you will receive/record data.

We will not access private records

Are you asking participants to disclose information about other individuals (e.g., friends, family, co-workers, etc.)? Yes

You have indicated that you will ask participants to disclose information about other individuals (see Populations tab). Describe the data you will collect and discuss how you will protect confidentiality and the privacy of these third-party individuals.

Our de-identification measures, which separate personal information from interview and survey responses, will help to reduce the likelihood that personal or sensitive information will be revealed unintentionally. There is a very unlikely but not impossible chance that in the course of answering questions, interview participants might reveal activities such as trespassing. Should these actions be disclosed, we will remind the participant of our obligations to their privacy and to the law and consult with the IRB about the best course of action going forward.

If you are collecting information that participants might consider personal or sensitive or that if revealed might cause embarrassment, harm to reputation or could reasonably place the subjects at risk of criminal or civil liability, what measures will you take to protect participants from those risks?

The study procedures themselves are not risky. They involve activities and questions that participants might encounter in the course of their day to day lives. The questions may trigger strong emotional responses. To protect participants from those risks, we will remind them of the potential for the questions to be emotional and, if we see signs of emotional distress or stress, ask the participant whether they would prefer to end the interview, take a break, or reschedule for another time. If the situation becomes dangerous for either the research participant or interviewer, we will end the interview immediately and contact appropriate emergency personnel.

If any of the study procedures could be considered risky in and of themselves (e.g. study procedures involving upsetting questions, stressful situations, physical risks, etc.) what measures will you take to protect participants from those risks?
The study procedures themselves are not risky. They involve activities and questions that participants might encounter in the course of their day to day lives. The questions may trigger strong emotional responses. To protect participants from those risks, we will remind them of the potential for the questions to be emotional and, if we see signs of emotional distress or stress, ask the participant whether they would prefer to end the interview, take a break, or reschedule for another time. If the situation becomes dangerous for either the research participant or interviewer, we will end the interview immediately and contact appropriate emergency personnel.

Describe the anticipated direct benefits to be gained by each group of participants in this study (compensation is not a direct benefit). Most participants are unlikely to directly benefit from the research. We hope that many will find it therapeutic to share experiences and knowledge with others going through similar experiences.

If no direct benefit is expected for participants describe any indirect benefits that may be expected, such as to the scientific community or to society. The indirect benefits of participation include an opportunity to improve alignment between disaster recovery efforts and the priorities of the public with regard to the most beneficial way to bring about social, economic, and environmental changes.

Will you be receiving already existing data without identifiers for this study?

No

Will you be receiving already existing data which includes identifiers for this study?

No

Describe how the benefits balance out the risks of this study.

Will data be collected anonymously (meaning that you do not ever collect data in a way that would allow you to link any identifying information to a participant)?

No

Will any identifying information be recorded with the data (ex: name, phone number, IDs, e-mails, etc.)?

Yes

Will you use a master list, crosswalk, or other means of linking a participant's identity to the data?

Yes

Will it be possible to identify a participant indirectly from the data collected (i.e. indirect identification from demographic information)?

Yes

Audio recordings?

Yes

Video recordings?

Yes

Images?

Yes

Digital/electronic files?

Yes

Paper documents (including notes and journals)?

Yes

Physiological Responses?

No

Online survey?

No

Restricted Computer?

Yes

Password Protected files?

Yes

Firewall System?

Yes

Locked Private Office?
Yes
Locked Filing Cabinets?
No

Encrypted Files?
Yes

Describe all participant identifiers that will be collected (whether they will be retained or not) and explain why they are necessary.

We anticipate collecting the following identifiers to help manage response rate and any additional communication. They will be retained separately from the responses and will not be shared with anyone who is not included on this protocol. They will be linked to responses through a unique ID code. Name, Physical address, Email address, Telephone number. Profession, education level, gender, and age will be collected and stored with the data. Raw data will be aggregated in such a way as to obscure identity (for example, raw data entries that list a specific and identifiable professional position in the FEMA field office secretary in Lumberton will be re-coded to FEMA office staff).

If any links between data and participants are to be retained, how will you protect the confidentiality of the data?

The identifying information will be stored in a separate electronic file on a password-protected server. Only anonymized data will be shared with community partners and collaborators who are not directly involved in data collection and analysis (i.e., are not listed on the IRB protocol).

If you are collecting data electronically, what (if any) identifiable information will be collected by the host site (such as email and/or IP address) and will this information be reported to you?

We are not planning to collect data electronically.

Describe any ways that participants themselves or third parties discussed by participants could be identified indirectly from the data collected, and describe measures taken to protect identities.

Profession, education level, gender, and age will be collected and stored with the data. Raw data will be aggregated in such a way as to obscure identity. Sensitive identifiers will be removed from quotations used in publications. However, people who choose to be featured in video and audio products derived from the project will be identifiable by name and voice. The participants will know this ahead of time. We will not include any information in publicly released video products that we anticipate will jeopardize the safety or well-being of participants. Participants will sign forms indicating the level of permission they have issued with respect to our use of their face, name, and words in public.

Experiences with Hurricane-related disasters can lead to losses of property, income, and life. As such, the experience of re-telling these events may be either traumatic or therapeutic. We will include in our introduction of the study and explanation of risks and benefits a warning and a reminder that participation is voluntary and can be stopped at anytime. We intentionally waited over nine months between the end of the Hurricane and the proposed beginning of interview recruitment to avoid the chances of re-traumatizing participants. Some participants may decide to complete the interview of survey in a public location, we do not believe that there is a risk associated with participation in public. Should potential participants anticipate a risk, we can make arrangements to complete the data collection activity privately.

For all recordings of any type: Describe the type of recording(s) to be made Describe the safe storage of recordings Who will have access to the recordings? Will recordings be used in publications or data reporting? Will images be altered to de-identify? Will recordings be transcribed and by whom?

Interviews will be audio and video recorded. These will be stored on a password-protected share drive space at NC State University and will only be accessible by project personnel (and by IT professionals who manage such space) and its permissions). Raw recordings will not be used in publications or data reporting. They will be transcribed by project staff or, if funding allows, by outside transcription services. If the latter becomes possible, then we will send de-identified audio files so that the speakers are known only as respondentâ€• and not by name. In the past, we have used Pioneer Transcription, who uses an encrypted ftp server to transfer files of a sensitive nature.

Describe how data will be reported (aggregate, individual responses, use of direct quotes) and describe how identities will be protected in study reports.

Data will be reported in aggregate most of the time. When individual responses are highlighted and direct quotations are used to illustrate an important emergent theme or concept, we will identify stakeholders using characteristics that are likely to maintain anonymity even among close friends and colleagues (i.e., we would not that someone was a federal agency employee rather than an employee of the FEMA if there was only one FEMA respondent in the interview sample pool). Video and audio will be used to construct
short documentary films for viewing in the community and online. These will not be anonymous or confidential and participants will be aware of and give permission for these uses as they feel comfortable.

Will anyone besides the PI or the research team have access to the data (including completed surveys) from the moment they are collected until they are destroyed?

There is no plan for anyone besides the PI and the research team to have access to the raw data from the moment it is collected until the moment it is destroyed. Possible exceptions may include: sending audio recordings to a third party for transcription. This will be done only if the material is deemed very low risk (as is expected) and identifying information is not included in the file naming convention. There is also the chance that the technical team that supports the software for internet survey administration may access the data. As with all electronic files, there is also a chance that data may be accessed if the secure network at NCSU is compromised.

Anonymized and aggregated data may be provided to collaborators associated with the grant and to agencies and organizations interested in improving future restoration efforts. Some public data sharing may also be required by publication outlets. No access to the ID sheet or other data will be provided without prior IRB approval.

Describe any compensation that participants will be eligible to receive, including what the compensation is, any eligibility requirements, and how it will be delivered.

Research participants will not be compensated for this study.

Explain compensation provisions if the participant withdraws prior to completion of the study.

Research participants will not be compensated for this study.
### Table D-1. BRIDGE Builder Participant Leadership Status

<table>
<thead>
<tr>
<th>Leadership Category</th>
<th>Count</th>
<th>BRIDGE Builder</th>
<th>Project BRIDGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Organizer</td>
<td>4</td>
<td>12.5%</td>
<td>N/A</td>
</tr>
<tr>
<td>Decision Maker</td>
<td>11</td>
<td>34.4%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Volunteer/Activist</td>
<td>17</td>
<td>53.1%</td>
<td>25.0%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>32</strong></td>
<td><strong>100%</strong></td>
<td><strong>40%</strong></td>
</tr>
</tbody>
</table>

### Table D-2. Comparison of Robeson County and BRIDGE demographics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>130,625</td>
<td>88</td>
<td>32</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>52%</td>
<td>57%</td>
<td>50%</td>
</tr>
<tr>
<td>Male</td>
<td>48%</td>
<td>43%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Race &amp; ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>24%</td>
<td>31%</td>
<td>34%</td>
</tr>
<tr>
<td>Chinese</td>
<td>N/A</td>
<td>N/A</td>
<td>3%</td>
</tr>
<tr>
<td>Race</td>
<td>2015</td>
<td>2016</td>
<td>2017</td>
</tr>
<tr>
<td>------------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Latinx (any race)</td>
<td>9%</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>Native American</td>
<td>39%</td>
<td>39%</td>
<td>28%</td>
</tr>
<tr>
<td>White</td>
<td>25%</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>2%</td>
<td>6%</td>
</tr>
</tbody>
</table>