



# ADDRESSING FINANCIAL RECOVERY GAPS FOR SOUTH CAROLINA HOUSEHOLDS:

Models for Inclusive Disaster Insurance

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**Ceres Accelerator**  
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**Environmental  
Defense  
Fund**

# ADDRESSING FINANCIAL RECOVERY GAPS FOR SOUTH CAROLINA HOUSEHOLDS:

## Models for Inclusive Disaster Insurance

### Authors

Carolyn Kousky  
Environmental Defense Fund  
*ckousky@edf.org*

Karina French  
Environmental Defense Fund  
*kfrench@edf.org*

Xuesong You  
Federal Home Loan Mortgage Corporation  
*xuesong\_you@freddiemac.com*

### Project Team

Ann Roberson  
SC Department of Insurance

Tommy Watson  
SC Department of Insurance

Steven M Rothstein  
Ceres Accelerator for Sustainable Capital Markets

Monica Barros  
Ceres Accelerator for Sustainable Capital Markets

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# INTERVIEWEES

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Interviews with wide range of stakeholders served as a primary source for this report. These individuals shared their perspectives and expertise in interviews over the course of several months in 2022. The opinions provided were wholly their own. Their willingness to serve as interviewees does not represent a personal or institutional endorsement of this report.

**Benjamin I. Duncan, II**, Chief Resilience Officer, SC Office of Resilience, and staff

**Carol K. Dixon**, Project Director, Darlington County Long-Term Recovery Group

**Claire Balsley**, Director of Disaster Assistance Programs, SBP

**Dale Morris**, Chief Resilience Officer, City of Charleston

**De'Bograh VanEaton Palmer**, Program Coordinator, SC Department of Insurance / SC Safe Home Program

**J. Smith Harrison Jr., CPCU**, Executive Director, South Carolina Wind and Hail Underwriting Association

**Joe Boyes**, Director of Government Partnerships, SBP

**Laura Gassler**, Executive Director, Habitat for Humanity Georgetown, SC

**Lisa A. Sharrad**, Principal, Choice Flood Insurance LLC

**Michael Mancuso**, Executive Director & Principal, Waccamaw Community Foundation

**Susan L. Cutter**, Carolina Distinguished Professor and Co-Director, Hazards Vulnerability and Resilience Institute, University of South Carolina, Columbia

**Susan Lyons**, Chair, Groundswell

**Yolanda McCray**, President & CEO, Black River United Way

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# EXECUTIVE SUMMARY

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**South Carolina is facing escalating flood risk**, due both to climate changes leading to rising sea levels and changing storm patterns, as well as development in harm's way. From Hurricane Matthew to Hurricane Florence, recent history has shown the devastating effects that extreme flooding can have on South Carolina households and communities. This is only projected to increase in the coming years—the South Carolina Office of Resilience projects that by 2050, over 300,000 South Carolina properties will be at risk of flooding in a 100-year flood event from both coastal inundation and inland storms.

Severe floods can have devastating financial effects on households. **Research shows that the unexpected economic shock of a disaster disproportionately harms people with low- and moderate-incomes and people of color** and can cause long-term financial harm for households who do not have access to adequate financial support systems or disaster safety nets.

This report provides a comprehensive review of the current resources for economic recovery post-disaster in South Carolina and explores one mechanism for filling identified gaps in recovery: new disaster insurance models.

This research was undertaken with guidance from the South Carolina Department of Insurance in order to help identify current gaps in financial recovery from flooding, and to support emerging conversations in South Carolina around new insurance models to improve equity in disaster recovery. The report draws on interviews with South Carolina stakeholders and analysis of data from disaster recovery and insurance programs in the state, as well as a comprehensive literature review.

First, this report examines the current state of economic recovery from disasters to identify what gaps South Carolina households face, focusing specifically on the role of savings, loans, federal aid, and insurance. Based on both quantitative and qualitative data, the report identifies existing shortcomings and inequities in distribution and access to those recovery resources. Several common challenges emerged:

- Many sources of funds for recovery are **insufficient or inaccessible**, especially for low-income and communities of color.
- Disaster insurance can be **unaffordable** for low- and moderate-income households.
- There are often **substantial delays** in getting any recovery funds.
- The **needs of renters and rural areas** are not well met.
- **Heirs property** (where property title is handed down informally) can cause challenges in accessing multiple sources of funds.

Comprehensively addressing all these gaps will require a suite of policy reforms targeted at federal assistance programs, risk communication, and investments in hazard mitigation. **One critical part of the solution is to make disaster insurance—a key source for protection against the financial shock of disasters—more inclusive.**

Inclusive insurance broadly encompasses any insurance approach that aims to make appropriate coverage available and affordable to individuals currently under-served or unserved by the market. While prior research finds those with insurance have improved

recovery outcomes, far too often, those who need insurance the most are least likely to have it. Initiatives for inclusive insurance for climate disasters help build a system that is affordable, accessible, transparent, people-centered, and just. As detailed in a companion report on the broader topic, [Inclusive Insurance for Climate-Related Disasters: A Roadmap for the United States](#), inclusive insurance will likewise require regulatory changes, new public policies, new partnerships, but also new approaches to risk transfer.<sup>(1)</sup>

This report explores one specific approach to making insurance more inclusive in South Carolina: **new types of disaster insurance policy structures**. Several types of inclusive insurance product models have attracted increased attention as possible solutions for improving equity in disaster recovery.<sup>(2)</sup> Here, we explore potential applications, benefits, challenges, and implementation considerations of two insurance designs new to the US residential market—**microinsurance and group disaster insurance**.

Microinsurance has lower premiums and lower coverage levels, providing affordable baseline protection against disasters. Microinsurance is usually parametric, meaning policies pay a fixed amount of money based on an observable measure of disaster severity. This structure allows for payments to be delivered quickly and keeps administrative costs low.

The key benefits of microinsurance are the following:

- **Affordable Baseline Protection:** By design, microinsurance will have a lower cost for households to secure some base level of economic protection.
- **Fast and Flexible Payments:** Parametric-based payments do not require lengthy periods of damage assessment, so payments can be dispersed within days after a disaster, providing support at the moment households need it most.
- **Reduced Documentation Burden:** Because payment is not indemnity based, the documentation burden on households is reduced. This is especially relevant for South Carolina households that have heirs' property.
- **Potential increase in trust:** Previous research and stakeholder interviews show that many low-income and communities of color in South Carolina have lost trust in both government assistance and private insurers, and thus are less likely to engage in the market. Places where parametric insurance has been implemented report higher trust by eliminating conflict over assessed payment.

Microinsurance also faces several limitations and challenges:

- **Limited payout amount:** By design, microinsurance policies have low payouts, which would likely not be sufficient to make households fully whole after a disaster. It is appropriate when the flexibility and speed of payouts are critical.
- **Risk of ineligibility for FEMA assistance:** Due to FEMA's rules preventing duplication of benefits, parametric insurance payments may cause households to be ineligible for disaster aid they may still need.
- **Lack of familiarity from households:** As a new product, it is unclear whether households would understand and make use of parametric products.

**Group disaster insurance** is an insurance design that involves an intermediary institution between a group of policyholders and the insurer, securing wider take-up. The group disaster insurance model can vary depending on the specific role of the intermediary, spanning models with high centralization where a public entity or community organization purchases a single policy for a group of beneficiaries, to more facilitator roles where the intermediary helps link residents with an insurance firm for individual contracts.

The benefits of group disaster insurance include:

- **Greater number insured:** Group disaster insurance is designed to expand the number of households insured by providing or facilitating coverage.
- **Higher ability to meet needs:** The intermediary in group insurance models may be in a better position to guarantee that specific needs are met and to garner trust from the benefiting households.
- **Easier cost-sharing:** Because insurance purchase occurs through a single entity, it is much easier for public and philanthropic entities to contribute to insurance coverage to help support vulnerable households.
- **Incentives for community-level risk reduction:** If the intermediary pays an aggregate premium, community-level investments in climate adaptation could more easily be translated into premium reductions, incentivizing risk reduction.

Group disaster insurance also faces a couple challenges:

- **Success depends on the intermediary's capacity:** To serve as an intermediary for insurance, institutions must have knowledge of disaster insurance markets, staff capacity and resources to facilitate provision, and trust within the community.
- **Does not guarantee affordability:** While some mechanisms of group insurance, like greater risk pooling, can lead to lower premiums, by design it does not necessarily lead to more affordable protection.

Both models outlined here can help meet some of the documented recovery needs in South Carolina. They can broaden insurance coverage, make it more affordable, and tailor coverage to unmet needs. Both models also bring distinct new challenges for regulatory structures and implementation. This report serves as a guide for state regulators and policymakers in South Carolina to weigh the trade-offs of these new insurance models and chart a forward path to harnessing them for improved disaster recovery outcomes in their state.

There is no silver bullet solution to filling all the current gaps and inequities in disaster recovery. Tailored solutions for specific populations, needs, and contexts will be required to provide economic resilience across an entire community. Better understanding the current recovery gaps and some newer insurance tools can help inform these conversations. And recovery is only one piece of disaster risk management. Improving financial recovery, therefore, must complement other programs to improve risk awareness and lower potential losses.



# 1. INTRODUCTION

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South Carolina has long suffered economic damage from both coastal and inland flooding. Between 1954 and 2020, South Carolina received 29 presidential disaster declarations related to floods and storms. Recent years have seen an increase in these flood events. In 2015, South Carolina saw record flooding, particularly in the Charleston tri-county area, Richland County, and areas in the Pee Dee and Santee watersheds, with rainfall amounts between 15 and 25 inches.<sup>1</sup> Thousands of homes and businesses were damaged. In the three years after, South Carolina experienced devastating flooding, tidal surges, and extreme wind from hurricanes. In 2016, Hurricane Matthew came ashore with extreme rainfall leading to widespread flooding, both along the coast and inland; the National Center for Environmental Information estimates damages from Matthew at over \$10 billion. A year later, Hurricane Irma made its way to South Carolina and yet again led to widespread flooding and storm surge. In 2018, Hurricane Florence made landfall in North Carolina, causing heavy rainfall and catastrophic flooding resulting in over \$2 billion in damage<sup>(3)</sup> and another federally-declared disaster for South Carolina.

These types of extreme flooding events are projected to increase with climate change in the coming years, as hurricane patterns change, heavy precipitation events become more frequent, and sea levels rise. On the coast of South Carolina, damaging flooding events are expected to occur around ten times more often by 2050 than they do today.<sup>(4)</sup> As sea-level rise advances, it will begin to permanently inundate coastal property, but before land is lost to the sea, coastal properties will experience increases in nuisance flooding. By 2045, it is estimated that more than 16,000 residential properties, concentrated around Charleston and the South Carolina Lowcountry, will experience chronic coastal inundation (meaning flooding at least 26 times a year) and by 2100, the number jumps to 116,000 homes worth almost \$53 billion.<sup>(5)</sup> Similarly, the South Carolina Office of Resilience projects over 340,000 residential and commercial properties are at risk of being flooded with over 6 inches of water by 2052 in a 100-year flood event.<sup>(6)</sup>

Flood risk is not distributed evenly, and socially vulnerable groups are likely to be disproportionately impacted. Along the South Carolina Coast, a 2 to 4-ft increase in sea level rise will impact low-income, predominantly Black communities up to two times as much as high-income, predominantly white communities, concentrated in the low-lying areas just inland.<sup>(7)</sup> Reporting from communities in South Carolina has also shown that current flood impacts are often a function of historical racial discrimination and prior city planning, which led to flood risk affecting Black and low-income homeowners more acutely.<sup>(8)</sup> As we explore in this report, vulnerable communities often lack access to necessary financial resources post-disaster, leading to more difficult and slower recoveries.

In response to increasing flood risk, South Carolina has expanded efforts to lower damages from these events and improve the resilience of residents and their communities. The South Carolina Safe Home program, established in 2007 by the Department of Insurance, has provided grant funding to coastal property owners for retrofits and improvements that make their home more resilient to hurricane and wind damage. The South Carolina Office of Resilience (SCOR) was established in 2020, and over the past few years has established

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<sup>1</sup> For more information, see: <https://www.weather.gov/chs/HistoricFlooding-Oct2015>.

funding for risk reduction infrastructure and a home buyout program using federal Community Development Block Grant Mitigation Funds. SCOR has prioritized its program dollars to areas with high social vulnerability, and over half of their funding has gone to households with incomes less than 30% of the Area Median Income. This has allowed more vulnerable communities to access funding for resilience investments. Like all public resilience programs, however, these funds can take years to become available, and there are limitations to both initiatives in terms of the amount of funding available, accessibility, and trust by communities. For households that do not own homes or reside in mobile homes in rural flood risk areas, there are fewer options for improving the resilience of their residence within current program structures.

While these resilience programs have been—and will continue to be—essential to managing escalating flood and storm risks, their impact is often long-term. When disasters do hit, they impose significant direct and indirect financial costs on households. As such, the state will still experience damaging events necessitating complementary investments in sound recovery programs. As this report documents, the existing programs and tools for financial recovery from a disaster—including using one’s own savings, federal aid, loan programs, and property insurance—are not currently meeting the needs of all households.

One part of the solution to begin filling these gaps is to make disaster insurance—a key source for protection against the financial shock of disasters—more inclusive. Inclusive insurance refers to products, partnerships, and approaches that aim to make appropriate coverage available and affordable to individuals currently under-served or unserved by the market. This current report explores two new types of inclusive insurance policy structures: parametric micro-insurance products, which have lower premiums and provide households with fast and flexible pre-determined payouts after certain disasters, and group disaster insurance programs, in which a non-profit, local government, or other entity facilitates or provides disaster insurance on behalf of a group (variations of this model have sometimes been referred to as meso-insurance, aggregator models, or community insurance). This report examines these models to assess whether and to what extent they can help fill the identified gaps in recovery, highlighting their benefits and potential applications, their limitations, and implementation considerations. Each design approach offers novel ways to address some of the timing and accessibility gaps that households currently face, but also come with certain tradeoffs and limitations.

**Section 2** of this report provides a comprehensive review of the current resources for economic recovery post-disaster in South Carolina, analyzing data on these programs and their operation in the state.

**Section 3** summarizes major gaps in households’ recovery, based on data analysis, existing research, and stakeholder interviews.

**Section 4** explores in details the two innovative types of insurance policy structures, evaluating their ability to fill identified gaps, as well as implementation challenges and opportunities.

# 2. SOURCES OF FINANCIAL RECOVERY FROM CLIMATE DISASTERS IN SOUTH CAROLINA

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## Disasters cause enormous financial strain for households

Property destruction for disasters can be severe, and there is a large array of non-property costs that households incur as well, such as expenses from evacuation, temporary housing, debris clean up, commuting when transportation networks are disrupted or vehicles are damaged, or generators and fuel when power is out for extended periods.<sup>(9)</sup> The economic burden of these immediate costs is worsened when disasters disrupt work and households lose income due to the disaster. All these economic impacts are accompanied by non-financial costs as well, such as injury and mortality, other health impacts, stress and anxiety, and decreases in quality of life.

**Research has documented that the negative financial shock from climate disasters disproportionately hurts low-income communities and communities of color.** They experience longer and more difficult post-disaster recoveries, with longer-term negative economic impacts.<sup>(10)</sup> Without sufficient resources for recovery, disasters can be tipping points into financial precarity, as households may have to defer important expenses, such as healthcare and debt servicing, and are more likely to default on loans, accumulate debt, and exhaust savings; these long-term negative impacts on financial health are much more likely for households that were already financial constrained.<sup>(11-15)</sup> As such, disasters can also worsen overall wealth inequality.<sup>(16-17)</sup>

**To cover the economic costs of a disaster, households have four main sources of funding or financing: savings, loans, disaster aid, and insurance.**

This financial precarity after a disaster is more acute for Black and Hispanic households, who face a persistent and growing wealth and income gap. Across all income levels, white households have on average greater financial assets to protect against economic shocks.<sup>(18)</sup> According to the Federal Reserve's 2019 Survey of Consumer Finances, Black families' median and mean wealth is less than 15% of white families.<sup>(19)</sup> South Carolina households face one of the largest racial disparities of all states.<sup>(20)</sup> According to the 2021 Survey of Income and Program Participation, the median net worth (assets and income) of a white household in South Carolina is \$147,312; for a Black household, it is only \$43,900.<sup>(21)</sup>

This section provides an overview of all four sources, how they are operating in South Carolina, how access may differ by income and race, and the benefits and limitations of each, drawing on analysis of data, interviews with stakeholders, and review of existing research.

**In South Carolina, nearly a quarter of households have zero savings to draw on for emergencies.<sup>II</sup>**

## Savings

Savings are often a household's first source of funds to cover urgent and unexpected disaster expenses. Yet, nationally, most consumers have insufficient liquid funds to cover the economic shock of a disaster. Close to 40% of consumers have less than one month of income saved for emergencies, and nearly 30% of households in the U.S. would struggle to cover an unanticipated expense as small as \$400.<sup>(22,23)</sup> When unexpected expenses coincide with a reduction in income, the effect is more severe: an estimated 65% of families lack the necessary amount of savings to weather a simultaneous income dip and expenditure spike.<sup>(24)</sup> And when households exhaust any of the savings they had accumulated for retirement, medical needs, or education, it leaves them much more financially precarious after the disaster.

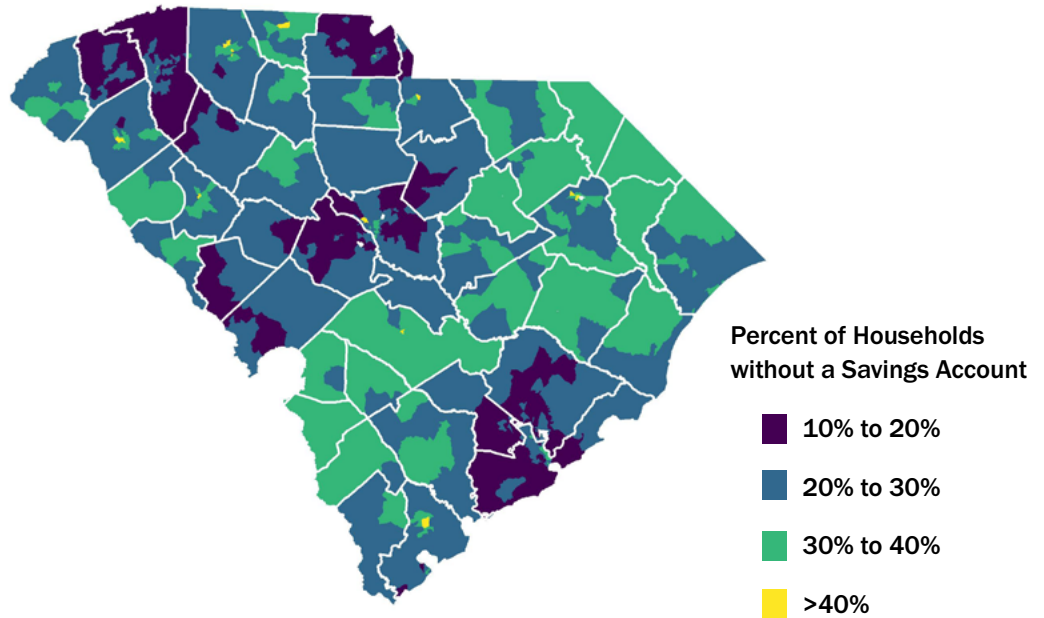


FIGURE 1:

### Share of SC Households with a Savings Account by Census Tract, 2021

Source: Traditional savings account data from Claritus IClout, obtained from S&P Global Market Intelligence.

Figure 1 shows the share of households with a traditional savings account across census tracts in South Carolina. There are areas of the state where a sizeable share of households do not have a savings account. Unfortunately, data is unavailable on the magnitude of savings.

As is the trend nationally, households of color in South Carolina are less likely to have savings available to them. According to a 2019 FDIC national survey, 68.3% of white households in South Carolina reported setting aside money for emergencies in the last year, compared to only 50.7% of Black households.<sup>(25)</sup>

<sup>II</sup> Calculated by the authors with Financial Product Demand data from Claritus IClout, obtained from S&P Global Market Intelligence.

In South Carolina, residents can also save for disasters tax-free through the Catastrophe Savings Account program. These interest-bearing accounts can be established at any state or federally chartered bank and are not subject to state income taxes if used for qualifying catastrophe expenses. The funds are, however, still subject to federal taxation.<sup>III</sup> There is no statewide data on the number of catastrophe savings accounts or their use to evaluate the program.

## SBA Disaster Loans

The U.S. Small Business Administration administers a disaster loan program not only for businesses, but also homeowners, renters, and non-profits. Over 85% of the program applicants are households.<sup>IV</sup> Loans can be used to repair and replace damaged buildings and contents and businesses can also make use of them to cover lost revenue due to a disaster. Loans can be increased 20% to cover disaster mitigation measures, but very few borrowers make use of this program.

Households can apply for personal property loans, which provide up to \$40,000 to replace damaged items not covered by insurance, and/or real property loans for up to \$200,000, which can be used to repair a borrower's primary residence. The SBA reduces interest rates for some borrowers in greater need: currently, interest rates are at most 4% for applicants who cannot obtain credit elsewhere and 8% for those who are credit worthy. From 2008 to 2018, the average interest rate among approved home loans was about 2.5% nationwide (calculated by the authors).

**Denials of SBA disaster loans increases as income declines.**

**Disaster loans can provide important financing for recovery, but only for those able to service additional debt.** In order to qualify for a loan, borrowers must meet certain debt-to-income and credit score requirements to show reasonable repayment ability; many low-income households fail to qualify. In addition, the SBA has a collateral requirement, for example, the borrower's home, if a resident chooses a loan amount above a certain threshold, currently \$25,000.<sup>V</sup>

From 2008 to 2018, over 15,000 South Carolina residents applied for an SBA disaster loan. Among loans awarded, the average approved amount was \$24,770 with a median of \$19,180 (in 2018 dollars). Among the lowest-income applicants, the majority of loans are denied (Figure 2). The Small Business Administration does not gather race or ethnicity data in their loan applications, so it is unclear whether residential disaster loan approvals vary also by race of a household independent of income.

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III While contributions to the catastrophe savings account are not federally tax deductible, households may deduct from their federal taxes any property damage caused by a federally declared disaster that is not reimbursed by government aid or insurance. See: <https://www.irs.gov/taxtopics/tc515>. However, this requires specific documentation for the estimated value of damage, and only benefits households above an income level that have a significant tax burden to be reduced.

IV This was calculated by the authors using SBA disaster loan data from the agency. Note: all views expressed in this report are those of the authors and do not reflect the view of the Small Business Administration.

V It is estimated that the median borrower is willing to give up 40% of their loan amount to avoid such requirements (26).

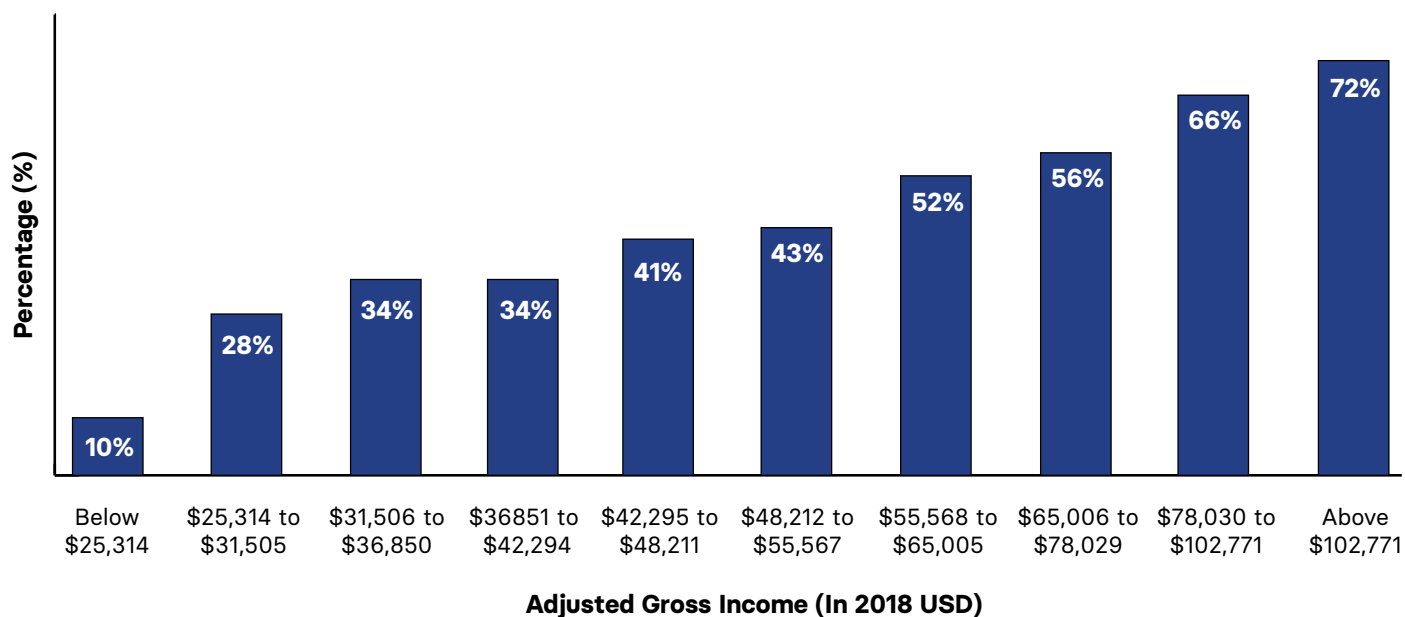


FIGURE 2:

### SBA Residential Disaster Loan Approvals by Income, South Carolina, 2008 - 2018

Note: Figure shows loan approval rates by gross income deciles. Withdrawn/cancelled applications are excluded. 187 applicants did not disclose their gross income information and all of them were declined.

Source: SBA residential disaster loan data from 2008 to 2018.

## Federal Disaster Aid

After large disasters, the federal government may offer assistance, typically provided through the Federal Emergency Management Agency (FEMA) and/or the Department of Housing and Urban Development (HUD).

### FEMA Individual Assistance Grants

Nationwide, the disaster assistance program for households (the Individual and Households Program, or IHP) was authorized in only 35% of presidential declarations (30% excluding the COVID-19 pandemic) between 2010 and 2022.<sup>VI</sup> The program consists of two major types of assistance: Housing Assistance (HA), which could be either financial assistance or direct assistance (i.e., a place to live temporarily), and Other Needs Assistance (ONA), which covers disaster-related expenses such as medical or childcare expenses.

IHP assistance is intended to meet basic recovery needs that are not covered by insurance or other financial programs. IHP is not designed to provide the full amount of funding needed to bring recipients back to pre-disaster financial or housing conditions and cannot provide assistance when the household has gotten funds from another source for the same purpose, including insurance and charities—this is referred to as “duplication of benefits.”<sup>VII</sup>

VI Calculated by the authors using the Disaster Declarations Summaries data from OpenFEMA. Note that a disaster may affect more than one state and so may involve several declarations.

VII Personal sources of income (such as savings, retirement accounts, credit cards, and in-kind donations) do not count as duplication of benefits.

**FEMA states that IHP “is not a substitute for insurance and cannot compensate for all losses caused by a disaster.”<sup>VIII</sup>**

Over the last two decades, South Carolina has received five weather-related disaster declarations that authorized individual assistance; over 177,000 residents have applied for IHP assistance across these events.<sup>IX</sup> The average FEMA IHP grant in South Carolina has totaled just \$3,768 (median: \$1,865). This is less than the national average for the same time period (\$4,270) and far less than the maximum amount statutorily allowed (\$37,900 in FY 2022).<sup>X</sup> We heard in interviews that the amount awarded can be far below the cap for a variety of reasons, such as incomplete documentation, inexperienced or biased inspection processes, and immediate denials for insured applicants even for uninsured costs. This can result in households getting insufficient payments, particularly those unaware of—or unable to navigate—the appeals process.

Since the amounts are limited and only for losses not covered by insurance or other programs, IHP is used more frequently by lower-income South Carolina households without access to these other funds (see Figure 3). FEMA has not historically collected data on applicants’ race or ethnicity, so it is unclear whether distribution of IHP varies based on the race of the household.

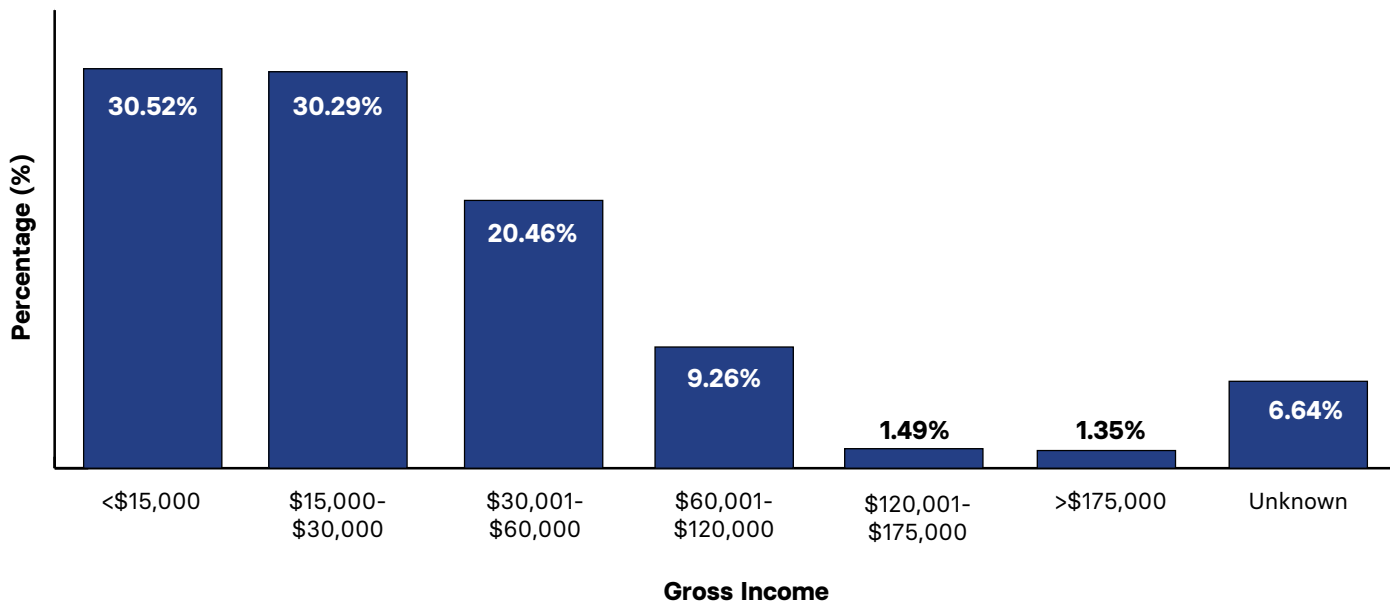


FIGURE 2:

### Gross Income Distribution of FEMA IHP Program Applicants from South Carolina

Note: Data consists of five natural disaster declarations between 2004 and 2020.

Source: The Individuals and Households Program - Valid Registrations Dataset from OpenFEMA.

VIII See: [https://www.fema.gov/sites/default/files/2020-07/fema\\_individuals-households-program\\_fact-sheet.pdf](https://www.fema.gov/sites/default/files/2020-07/fema_individuals-households-program_fact-sheet.pdf).

IX This includes: Tropical Storm Frances in 2004, Severe Storms and Flooding in 2015, Hurricane Mathew in 2016, Hurricane Florence in 2018, and Severe Storms, Tornadoes, and Straight-Line Winds in 2020.

X Federal Register, Vol. 86, No. 217, Monday, November 15, 2021: <https://www.govinfo.gov/content/pkg/FR-2021-11-15/pdf/2021-24755.pdf>.

Only 28% of South Carolina applicants in past disasters satisfied eligibility requirements. The top three reasons for HA ineligibility across all these disasters were insufficient damage (54%), coverage by insurance (26%), and ownership not verified (7%).<sup>XI</sup> Interviewees noted that applicants can often be denied full award amounts inappropriately, through faulty inspections or automatic denials due to insurance status. This again prevents some households from getting funds they deserve.

To be eligible for the IHP program, applicants must provide documentation to verify identity, citizenship/immigration status,<sup>XII</sup> and home ownership. The share of applicants deemed ineligible due to ownership verification has grown steadily over time, from 8% in 2015 to 15% in 2020. Inability to produce documentation of ownership could be due to possession of heirs' property, where property is passed down through generations without a formal will. In South Carolina, many African American communities such as those of the Gullah ethnic group in the Lowcountry region, own heirs' property.<sup>XIII</sup> The difficulty in accessing FEMA disaster assistance for owners of heirs' property has been a documented challenge for many years.<sup>(28)</sup> In response, in September of 2021, FEMA greatly expanded the types of documents that applicants could provide to verify occupancy and ownership.<sup>XIV</sup> In the coming years, this should reduce denials of aid among those with heirs' property.

The combined result of high administrative burden, high rejection rates, and slow dispersal of FEMA IHP funds has been shown to decrease trust and application rates in South Carolina, especially in communities of color. Qualitative research conducted in Marion County showed that over the course of three major weather events, residents experienced high rates of rejection (over 50%) of their FEMA applications, and applications declined over time in subsequent storms.<sup>(29)</sup> This has led to distrust in federal assistance and, as we heard in interviews, a feeling that government assistance is simply not designed for some vulnerable communities.

### **Community Development Block Grant - Disaster Recovery Program**

After severe disasters, Congress frequently appropriates funding for long-term recovery to the Community Development Block Grant - Disaster Recovery Program (CDBG-DR) within the Department of Housing and Urban Development (HUD). CDBG-DR provides flexible funding for programs targeting housing recovery, economic development, social services, and community planning, and is intended to fill disaster recovery needs not met by other sources. While households cannot apply to HUD directly, they will benefit if local governments establish programs for residents.

Unlike FEMA IHP aid, CDBG-DR can enable states, territories, and local governments to direct significant resources toward restoring affordable housing supply and assisting households with long-term recovery costs. The governments allocate funds according to

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XI According to the Individuals and Households Program - Valid Registrations data from OpenFEMA.

XII The applicant must be a U.S. citizen, non-citizen national, or qualified alien.

XIII Nationally, heirs' property is more common within rural African American communities in the south, coastal African American communities of the Gullah in the Southeast, Appalachian White families, Hispanic families in colonial communities in the southwest and in Puerto Rico, and Native American families.<sup>(27)</sup>

XIV See: <https://www.fema.gov/press-release/20210902/fema-makes-changes-individual-assistance-policies-advance-equity-disaster>



their self-developed recovery plans, subject to varying requirements that a portion of funds go to low- and moderate-income households, affordable rental housing programs, or public housing.

Between 2005 and 2015, an average of \$827 million of CBDG-DR funding was expended per disaster nationally.<sup>(30)</sup> South Carolina has received over \$372 million in CDBG-DR grant funding in response to the 2015 floods, Hurricane Matthew in 2016, and Hurricane Florence in 2018. Most of the funding has been awarded to the South Carolina Office of Resilience, but around 20% was awarded directly to local governments. With its funding, SCOR has provided grants to rebuild 3,226 homes<sup>XV</sup> and has prioritized low- and moderate-income communities when making rebuilding grants. In addition, funds can be used to address deferred maintenance; for example, grant funds can be used to build a completely new roof of higher quality, not just providing a patch for storm damage.

While the grant amounts are significant, there is a long timeline until CBDG-DR funds are available to state program administrators and then to households, due to congressional approval of CBDG-DR program appropriation being required for every disaster, as well as lengthy application development and fund dispersal processes. For example, the Federal Register notice awarding the funds for Hurricane Florence in 2018 was not issued until 16 months after the disaster. The result is that CBDG-DR can be a resource for South Carolina households in the years after a disaster, not months. SCOR is on track to spend South Carolina's CBDG-DR funds from Hurricane Florence on time, but more than 60% of South Carolina's CBDG-DR funding still remains to be spent, over four years after the event, due to the lengthy federal process.<sup>XVI</sup> This pace of spending is typical of long-term recovery funds under CBDG-DR; historically, housing recovery activity has taken many years.<sup>(30)</sup> Currently, there are still CBDG-DR grants being administered by HUD over 10 years after the disaster they are addressing.<sup>(31)</sup> In interviews, stakeholders stressed that the long timeline poses a real burden on households. One respondent noted that the delay essentially leaves many households living in "deplorable" conditions for years after a disaster.

## Insurance

### Homeowners' Insurance

A standard homeowners insurance policy provides financial protection for one's home and its contents against many types of damage. Lenders typically require homeowners' insurance as a condition for a mortgage so that if the home is damaged, the bank will not have lost its collateral; this makes homeowners' insurance fairly widespread, particularly among those with a mortgage. However, over 12% of those without a mortgage are estimated to be uninsured; Black and Hispanic households and mobile home owners are also more likely to be uninsured.<sup>(32)</sup>

Insurance take-up rates in South Carolina vary across the state and appear related to income and ownership status. Overall, an estimated 77% of owners and renters in the state are

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XV For up-to-date data, see SCOR data dashboard: <https://www.arcgis.com/apps/dashboards/8c6154d130154bd2ac59f22c53145407>.

XVI Calculated by authors based on CBDG-DR financial report from December 1, 2022: <https://www.hud.gov/sites/dfiles/CPD/documents/CDBG-DR/CDBG-DR-Grants-Financial-Report-2022-12.pdf>

XVII Calculated by the authors with U.S. Insurance Market Demographics data from Claritus IClout, obtained from S&P Global Market Intelligence.

estimated to have a standard property insurance policy as of 2019.<sup>XVII</sup> The roughly 70% of residents that are owners of property are much more likely to be insured: on average, the take-up rate among owners is about 84% but is less than 45% for renters (see Figure 4 for geographic variation.) Take-up also varies by income. In analysis for this report, we find that after controlling for other variables, a 1% increase in a census tract’s median household income is associated with an 5.4% increase in insurance take-up rates.<sup>XVIII</sup> In the lowest-income census tract, only 37% of households have insurance, while in the highest-income tract, 93% of households are insured.

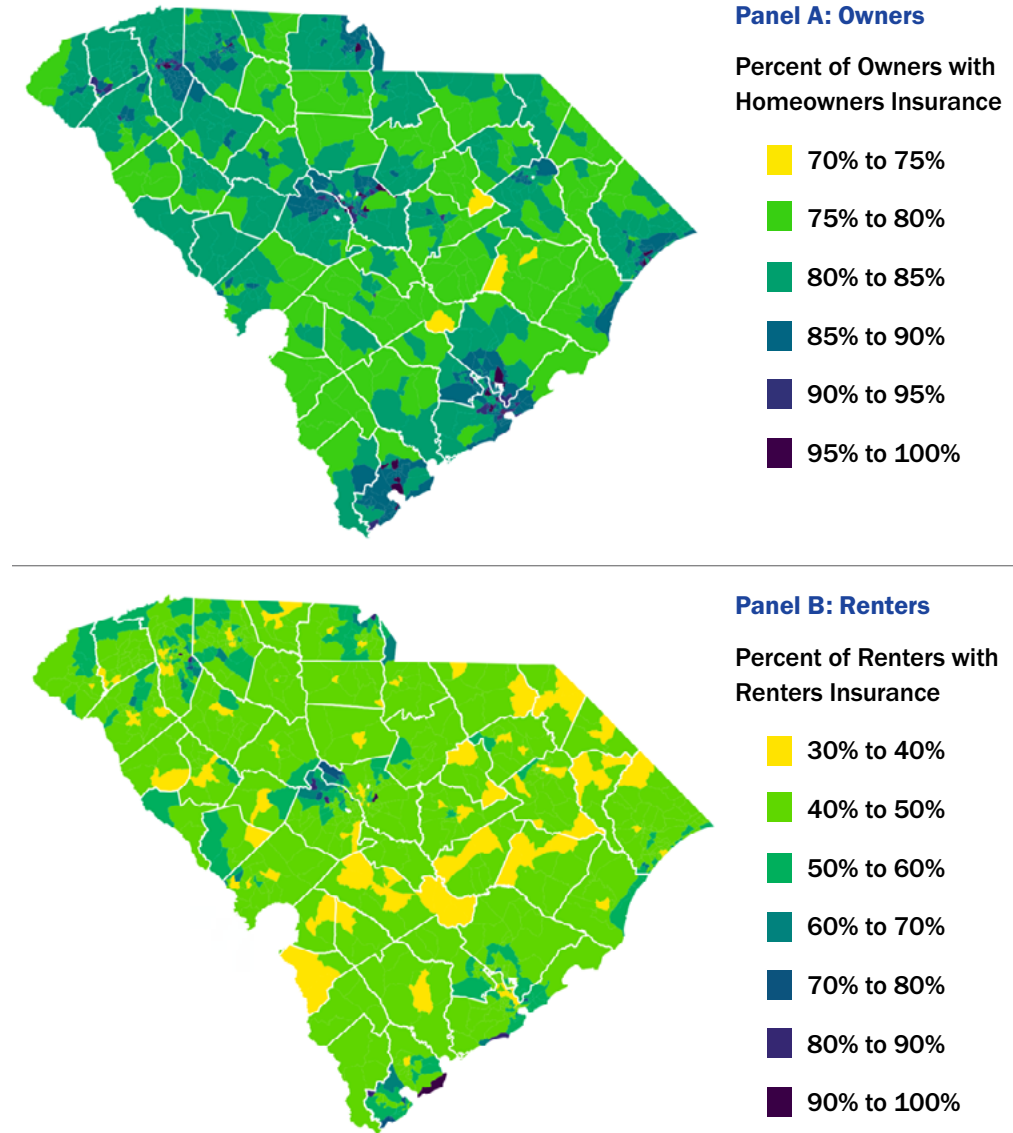


FIGURE 4:  
**Share of Households with Homeowners/Renters Insurance at Census Tract level, 2019**

Source: Homeowners/renters insurance policy data from Claritus ICloud, obtained from S&P Global Market Intelligence and number of households from the U.S. Census.

XVIII Results available from authors upon request.

Owners of heirs' property in South Carolina may face additional difficulty in securing homeowners insurance. Insurance for property will only be written for individuals that are able to prove a financial interest in the property (an "insurable interest"). While this is an important mechanism to prevent fraud, the requirement can create challenges for those without a formal deed and title, which is more common among people of color in South Carolina. There is little information available on how widespread of a problem this may be in practice.

**Many homeowners policies do not provide full coverage for damage from natural hazards.**

Insurance for disasters is inherently challenging for companies to provide due to the correlated losses and catastrophe potential.<sup>(7)</sup> Disaster insurance can often, therefore, not be profitably offered at a price that consumers are willing or able to pay. As such, some disaster costs are fully excluded from homeowners policies, such as flooding and earthquakes. Other losses may be excluded in some policies, such as mold remediation or mudslides. If not excluded, insurers may put other limits on certain losses, such as through sublimits (caps on payouts for specific types of damage) or higher deductibles. For example, insurers in hurricane-prone coastal areas may exclude wind coverage, or increase deductibles for storm-related damage, referred to as hurricane deductibles. This may be why many consumers believe their homeowners insurance coverage is more comprehensive than it is in practice.<sup>(33)</sup>

Homeowners' insurance also does not typically cover the range of non-property costs that accumulate after a disaster, such as loss of income, evacuation costs, measures to cope with utility disruption, and debris clean up. Property insurance is also a limited tool for renters. Renters insurance covers the contents of a rental unit. The biggest expense after a disaster for renters, however, can often be higher post-disaster housing costs and long wait times to find affordable housing, fueled by a reduction in supply from damage and a spike in demand.<sup>(34)</sup> The majority of low-income households are renters<sup>(35)</sup> who will thus struggle with appropriate financial protection.

In response to limitations on disaster coverage in the private sector, many public sector programs exist in the U.S. to provide property insurance for specific natural hazards, such as the National Flood Insurance Program. Like other states along the Gulf and East coasts, South Carolina has a program to provide homeowners' or wind insurance to residents unable to find an affordable policy in the private market. These are often called wind pools or beach plans and can take a variety of forms.<sup>(33)</sup> Policyholders in South Carolina facing a wind exclusion may secure a wind specific policy through the state's wind pool, the South Carolina Wind and Hail Underwriting Association.

The wind pool is intended to be a market of last resort, and households are encouraged to seek coverage in the private market first. South Carolina wind pool policies face a couple restrictions: replacement cost coverage is only available for single family dwellings built after 1950, and the home must have a flood policy in force at the time of the loss in order to get the full replacement cost coverage for the property.

The South Carolina wind pool has seen a decrease in the number of policies since 2011, a signal of an increasingly healthy private market for homeowners insurance and a stable regulatory environment for insurers. Between 2011 and 2021, policy counts in the wind pool decreased by 69%; as of year-end 2021, there were 14,612 policies-in-force in the program.<sup>(37)</sup> In addition to a decrease in policy counts, consumer complaints in coastal areas have declined since 2007 and competition in the coastal marketplace has increased.<sup>(37)</sup>

Supporting this stable market, the SC Department of Insurance has an Insurance Locator Service that helps anyone in the state find insurance coverage.

In South Carolina, the wind pool has also helped households fund investments in resilient retrofits that can improve availability and affordability of insurance. Since 2007, the SC Department of Insurance has provided over 7,290 grants for households to strengthen their roofs. In interviews, stakeholders noted that if homes are built to FORTIFIED wind protection standards as certified by the Insurance Institute for Business & Home Safety (IBHS), the owners have little trouble obtaining coverage in the private market.

### Flood Insurance

Flooding is excluded from homeowners' policies but separate flood insurance policies have been available for more than fifty years through the federal National Flood Insurance Program (NFIP), housed in the Federal Emergency Management Agency (FEMA). Communities join the program, adopting minimum floodplain management regulations, and then residents can purchase coverage. Homeowners can insure their buildings up to \$250,000 and their contents up to \$100,000 (renters may purchase a contents-only policy). Policies are administered by private firms, but rates are set by FEMA and all risk is held by FEMA. Today there are around 5 million policies-in-force nationwide.

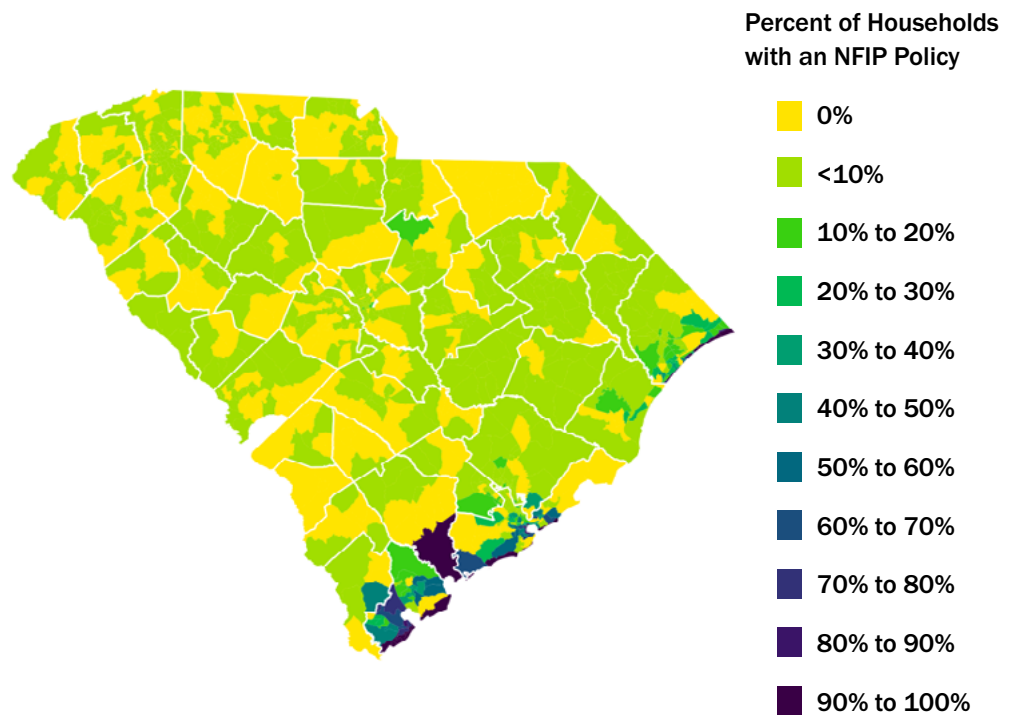


FIGURE 5:

### NFIP Flood Insurance Takeup Rate by Census Tract, March 2022

Note: NFIP Flood insurance take-up rate is calculated as the ratio of NFIP policies in force as of March 31st, 2022 to the total number of housing unit in a census tract. Statistics include both residential and non-residential policies.

Source: FIMA (Federal Insurance and Mitigation Administration) NFIP Redacted Policies data from OpenFEMA and housing unit data from Census Bureau's 2020 American Community Survey 5-year estimates.

As part of the program, the NFIP produces flood insurance rate maps (FIRMs), which primarily depict the 100-year floodplain called the Special Flood Hazard Area (SFHA). There is a federal requirement that borrowers with a mortgage from a federally backed or regulated lender must have flood insurance if their property is inside the SFHA (the “mandatory purchase requirement”).

South Carolina is ranked fourth in the nation for number of NFIP policies-in-force, behind only Florida, Texas, and Louisiana. In South Carolina, for more than a decade, the total number of NFIP policies has varied between roughly 201,000 and 211,000. These policies are concentrated in areas of South Carolina with high coastal flood risk (see Figure 5). Take-up rates along the coast can be quite high, but in inland areas, take-up rates are much lower. As of March 2022, we estimate that 32% of households in South Carolina coastal counties<sup>XIX</sup> had a NFIP flood insurance policy, while less than 1% had a policy in inland counties.

In interviews, stakeholders highlighted several dynamics that could affect flood insurance take-up and affordability in South Carolina: for many households, both flood insurance premiums and mitigation measures that can reduce insurance costs can be too costly and inaccessible, and many people do not understand flood risk or believe flooding will never happen to them. For households outside of the FEMA-defined floodplain or without a mortgage, there may be little information provided on flood risk and no incentive to retain flood insurance.

Among those that do have a flood insurance policy, the average flood insurance claim in South Carolina has been rising in recent years. Figure 6 shows total NFIP claims payments in South Carolina by year (in 2021 dollars). Since many households sustain flood damage without having flood insurance, however, this is not an indication of total flood losses in the state. Despite rising claims, we heard in interviews that underserved populations may struggle navigating the claims process, not realize their ability to submit for supplemental claims payments, or know how to find an advocate help them navigate the process. This can result in them receiving lower payouts.

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XIX These coastal counties include Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper.

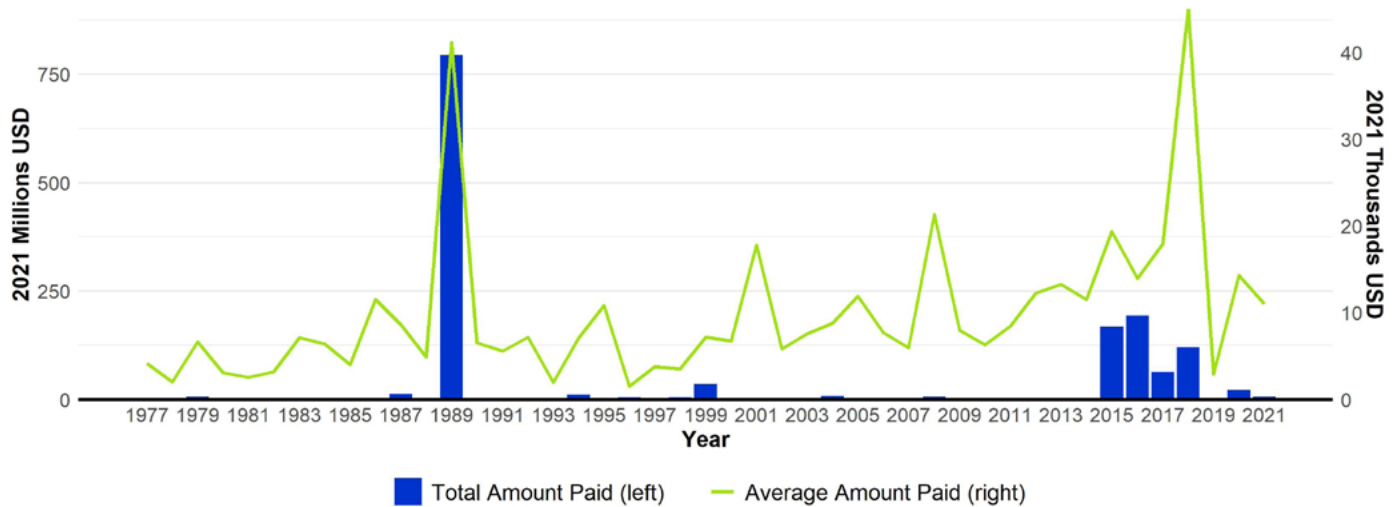


FIGURE 6:

### Total NFIP Flood Insurance Claims Paid by Year 1977-2021, South Carolina

Source: FIMA NFIP Redacted Claims data from OpenFEMA.

A 2018 analysis by FEMA found that those without flood insurance tend to have lower incomes than policyholders<sup>(38)</sup> and some households may not be willing or able to pay the cost of NFIP policies.<sup>(39)</sup> Recently, there has been additional concern about flood insurance affordability for certain high-risk households due to changes in pricing adopted by FEMA in 2021, referred to as Risk Rating 2.0. Previously, NFIP rates had been set based on broad flood zones and certain characteristics of the structure; as such, there were many cross-subsidies in prior pricing.<sup>(40)</sup> Under Risk Rating 2.0, FEMA is now harnessing modern catastrophe models and data to set premiums that better reflect risk at an individual property. When that results in an increase to a policyholder’s prior rates, the new pricing will be phased in over time, subject to a Congressional cap of increases not exceeding 18% per year. Risk Rating 2.0 has also included rainfall related flood risk in pricing for the first time. There is concern that this will lead to higher prices for flood policies outside of the SFHA, where rates had previously been lower and less reflective of risk; higher prices, while risk-based, may also depress demand.

Current aggregate data for South Carolina<sup>XX</sup> suggests that in the first year of price changes after Risk Rating 2.0 was adopted, most South Carolina households saw minimal change in their premium. Over 70% of policyholders had their annual premium increase by less than \$10, while almost 20% saw a price decrease, and less than half a percent saw an annual price increase over \$40. That said, those numbers were for current policyholders and do not reflect changes in prices for properties that were not currently insured.

**Affordability of flood insurance has long been a challenge for the NFIP.**

In recent years, a small private, residential market for flood insurance has emerged.<sup>(41)</sup> The market began with private firms writing additional flood coverage in excess of the NFIP coverage cap. Today, firms provide a variety of types of flood policies from an endorsement, or add-on, to standard homeowners policies, to full standalone policies. Some firms mimic NFIP terms closely, while others offer a wider variety of coverage options.

XX Source: Risk Rating 2.0 State Profiles <https://www.fema.gov/flood-insurance/risk-rating/profiles>.

The private flood insurance market in South Carolina is still small, but growing steadily. Table 1 shows the numbers of private, residential flood policies in South Carolina for the years such data is available. The number of private insurers providing flood coverage grew from only 12 in 2016 to 66 in 2020, when the state also passed new legislation to support private flood policies.<sup>(37)</sup> However, even at its peak market size in 2021, private policies were still less than 5% of the total number of residential NFIP policies in the state. Between 2020 and 2021, there was a growth in standalone residential policies and endorsements of 3,142, but that accounts for only roughly 36% of the drop in NFIP policies over this time. The increase in the private market thus cannot explain all the 2021 decline in NFIP policies.

TABLE 1:

**Number of Private Flood Insurance Policies-In-Force by Year, South Carolina**

Year	Standalone Policies		Riders on Homeowners Policies	
	First Dollar	Excess	First Dollar	Excess
2019	2,605	2,782	774	91
2020	4,787	2,618	965	89
2021	8,123	2,325	1,015	138

Note: “First Dollar” policies pay immediately without out-of-pocket copays, up to a full insurance limit. “Excess” policies pay for damage beyond the primary insurance limit.

Source: NAIC data obtained from S&P Global Market intelligence.

Despite ongoing challenges with take-up and affordability, research has found that flood insurance is financially protective to homeowners.<sup>(9)</sup> This is likely because it provides larger and timelier payments than disaster aid and does not require repayment. Flood insurance protects against delinquencies and defaults in mortgages.<sup>(42,43)</sup> Lack of flood insurance has also been found to be a mediator of increasing post-disaster inequality, with those having flood insurance able to do much better financially than those without insurance.<sup>(44)</sup>

# 3. COMMON GAPS IN FINANCIAL DISASTER RECOVERY RESOURCES

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As is the case across the US, the post-disaster financial needs of the most vulnerable are not consistently and fully being met by current recovery programs.<sup>(45)</sup> Looking across all sources, there are several common gaps that emerge from existing research and the analysis in the preceding section.

**Many sources of recovery are insufficient or inaccessible.** First, a sizeable share of the population in South Carolina has no or only small levels of liquid savings. This financial precarity means that when a disaster hits, many households will not have immediate funds for recovery or may not be able to bridge the gap until other financial aid is made available to them. While those households may turn to aid, research has shown federal aid programs are sometimes regressive<sup>(43)</sup> and that there can be higher rejection rates from federal disaster assistance programs for lower-income populations.<sup>(45)</sup> When such assistance is approved, the amounts are typically insufficient to fully cover their needs. These households are also often locked out of disaster loans or unable to take more debt.

**Disaster insurance can be unaffordable for low- and moderate-income households.** Insurance that covers natural hazards is more difficult for insurers to provide at affordable prices. Absent substantial investments in risk reduction, the price of insurance will increase as climate change increases the frequency and severity of storms and floods. Research shows that demand for insurance is relatively price elastic – meaning that as insurance costs increase, fewer households will choose to be covered.<sup>(46)</sup> Unsurprisingly, low-income households are also less likely to have disaster insurance as they have a lower ability to pay for it.<sup>(47)</sup> We heard in interviews that for very low-income households, there likely would always be a trade-off between insurance and needed expenses, such as food and medication, preventing insurance purchase.

**There can be long delays in getting funds.** Households often face access challenges and long delays in securing federal disaster funding.<sup>(30,48)</sup> One interviewee noted that federal programs, even operating at their best, would always take a long time to get dollars into the hands of households in need. Standard insurance policies, too, can sometimes take months to be paid to policyholders. The number one consumer complaint recorded by the National Association of Insurance Commissioners is delays in claims payments.<sup>XXI</sup> Delays in receiving financial assistance creates greater hardship for low-income households, as they have less savings for the immediate costs; these delays can have long-term impacts on financial health.<sup>(49)</sup> Interviewees also raised concerns about delays; one stressed that without immediate funds post-disaster, people have to rely on friends or family who may also have been impacted, and really struggle to begin the recovery process. Another interviewee highlighted that one of the more pressing needs when recovering from a flood or storm event is mold prevention and remediation, as there is a threshold of mold growth where buildings become unsalvageable and unsafe to live in if funds are not available quickly for remediation.

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XXI See: [https://content.naic.org/cis\\_agg\\_reason.htm](https://content.naic.org/cis_agg_reason.htm).



**The needs of renters and rural areas not well met.** Research has shown that post-disaster assistance programs tend to underestimate demand from renters, de-prioritize the needs of renters, and fail to adequately estimate renter and rental housing financial needs.<sup>(45,50)</sup> While renters do not bear the financial burden of property renovations, they face disruption from immediate displacement, higher rent prices, and possible eviction – recent analysis shows that disasters cause a significant increase in dislocations, especially in housing markets that are already unaffordable.<sup>(51)</sup> Renter insurance to cover damage to a renter’s possessions has historically had very low uptake and does not help with higher housing costs. Several interviewees also noted that in South Carolina, much of the affordable housing in rural areas consists of mobile and manufactured homes that are not well constructed or managed. Current rental protections are insufficient to ensure that if resources are going to rental housing, renters themselves are also benefitting.

**Heirs property can cause challenges in accessing funds.** Accessing homeowners’ insurance, NFIP insurance, and certain federal assistance often requires documentation of a property title. Households whose property have been inherited over generations and who lack that documentation, may have limited ability to access the financial tools to protect the wealth tied to the property. As such, the financial shock of climate disasters can disrupt families’ ability to build intergenerational wealth. While programmatic changes in FEMA’s IHP program are expanding access to some households by widening the type of documentation accepted, it has yet to be seen if this will fully address the problem. The barriers of documentation can also create difficulty for residents of manufactured housing and renters without formal leases.

Some of these economic recovery gaps can and should be addressed through reform to our federal aid programs, investments in poverty-reduction programs, and targeted risk mitigation funds for vulnerable populations. While critical, these efforts are often slow and politically challenging. Some gaps in both recovery programs and insurance programs, however, can be filled through a more thoughtful and concerted approach to making insurance more inclusive.<sup>(1)</sup> State regulators, policy makers, and local governments have opportunities to shape an inclusive insurance system in South Carolina. One component of this can be through innovative approaches to the design of disaster insurance policies.

# 4. INNOVATIVE INSURANCE MODELS

As outlined above, many South Carolina households lack the resources for economic recovery after a disaster. Insurance can provide much-needed funding for recovery quickly, but many households are unable to access or afford insurance for their post-disaster needs. Making a more inclusive disaster insurance system is one way of improving financial resilience to climate impacts.

“Inclusive Insurance” refers to any insurance approach that aims to make appropriate coverage available and affordable to individuals currently under-served or unserved by the market. Initiatives for inclusive insurance for climate disasters help build a system that is affordable, accessible, transparent, people-centered, and just. There are many approaches to making insurance more inclusive, across different scales of government and by the private sector. For a more holistic review of inclusive insurance for climate disasters, and possible regulatory and policy reforms, refer to the companion report: *Inclusive Insurance for Climate-Related disasters: A Roadmap for the United States*.

In this report, we focus on one aspect of inclusive insurance for South Carolina: innovative insurance designs. Several new models of disaster insurance have been receiving increased attention to help fill some of the identified gaps in financial recovery. We examine two broad insurance designs new to the US residential market—microinsurance and group disaster insurance—and explore how effective they would be in filling any of the current financial recovery gaps in South Carolina.

Ultimately, one insurance model cannot solve all of the identified gaps in recovery. For example, the same solution cannot provide immediate dollars incredibly quickly to eliminate delays and also provide the full amount needed to rebuild a substantially damaged home, as well as funding for myriad other economic costs. As such, a patchwork of public and private approaches for supporting economic recovery will be required, tailored to the particular population, hazard, and political and institutional context.

**The International Association of Insurance Supervisors defines microinsurance as “insurance coverage that is accessed by low-income population[s], provided by a variety of different entities, but run in accordance with generally accepted insurance practices.” (52)**

## Microinsurance for Disasters

### Overview

As part of growing approaches to expanding financial inclusion, in many countries around the world, microinsurance policies have been developed and tested to provide insurance to lower-income populations. Microinsurance has largely been implemented in developing and emerging economies and has been provided for many types of coverage such as life, health, crop, and livestock insurance.<sup>(53,54)</sup> To be effective for the targeted consumer, microinsurance must be affordable, simple, accessible, and the delivery process must be efficient.<sup>(53)</sup> Microinsurance products tend to have lower coverage limits, since they are targeted at customers that require lower absolute dollars of recovery assistance. Lower coverage limits also lead to lower premiums. These policies also typically are parametric.<sup>(55)</sup> Parametric policies pay a pre-determined amount based on an observable measure of the hazard, such as a specific wind speed or flood depth (a “trigger”). This lowers transaction costs, since it eliminates the need for a loss adjuster to visit each policyholder to determine payout—an economic model that would simply not be viable for low-coverage claims and

harder to reach populations. To further lower costs, new technologies may be used to simplify and speed multiple aspects of the insurance value chain from writing policies to claim administration, thus reducing administrative costs.<sup>(54)</sup> One example of this is the proliferation of mobile platforms, where all aspects of insurance for the policyholder can be done from their phone. Still, to provide coverage for those most in need often requires direct public sector philanthropic support, either to cover the costs of developing new microinsurance programs or to cover the cost of premiums for the target population.

The fact that microinsurance policies are parametric can provide other benefits beyond providing a lower-cost business model. It allows for faster payouts and can increase trust in the process, since payout is tied to an independent measurement and not subject to negotiation and conflict with adjusters or insurance companies. Parametric policy structures are also widely applicable, since the trigger can be designed for a variety of hazards and needs. In addition, parametric policy payouts are incredibly flexible for households. Since the payout is a pre-determined amount, it need not only compensate for property damage; the insured can use the funds for any disaster need, including non-property losses or compensating for lost income as a result of the disaster.

Parametric triggers have now been used around the world for almost all natural hazards, such as floods, storms, and drought, as well as other disasters, such as pandemics; this experience is allowing for improved structuring of these products. Ideally, parametric triggers should be easy to verify, maintained by an independent third-party, and correlated as closely as possible to the economic loss. But parametric policies can be problematic if the trigger is not designed very carefully. In order to minimize or avoid “basis risk” (the difference between the actual sustained loss and the amount paid in a parametric policy), there should be a strong correlation between the trigger and individual losses.<sup>(56)</sup> The risk that the policy fails to payout in a time of need is a concern of all parametric approaches and requires careful attention to trigger design.

**The only jurisdiction in the U.S. with a formal microinsurance market is Puerto Rico.**

In 2020, Puerto Rico’s insurance commissioner introduced specific regulations to define microinsurance for catastrophic risk and provide the product with its own regulatory framework. The Puerto Rican enabling regulation for microinsurance states that such policies are “intended to provide a financial protection tool for persons who otherwise could not purchase traditional insurance.” To qualify as microinsurance, the premiums cannot exceed 2% of an individual’s annual income or the minimum wage. For 2020, then, microinsurance premiums could not exceed \$260 per year or \$21.70 per month. Claims payments must be triggered by a common metric of a catastrophic event, such as a hurricane wind speed category and claims payouts must be paid within 10 days of the event.

Other small payment, parametric insurance products have been introduced in other states, but not necessarily designed or targeted to lower-income populations as is the case with microinsurance. For instance, Jumpstart insurance provides parametric earthquake coverage in California, as well as Oregon and Washington. Very few Californians have coverage against earthquakes, and existing indemnity-based insurance policies are often expensive or very limited in coverage. Jumpstart was designed to provide immediate financial support of \$10,000 to residents otherwise uninsured against earthquakes to “jumpstart” their recovery. As a parametric product, the funds can be used for any economic cost related to the disaster.

## Potential Applications and Benefits

Parametric microinsurance can be designed to meet many identified gaps in recovery. Its primary function has been to offer lower-income households some baseline financial protection. Many of the households most in need of disaster insurance are unable to afford traditional insurance coverage. Microinsurance offers a product that can be more affordable, providing households with initial financial protection. While not offering as large a payout, in a U.S. context, parametric microinsurance could provide fast dollars for immediate needs. The flexibility of the dollars also makes the product well suited to cover non-property costs, such as evacuation costs, temporary housing, or higher post-disaster rents.

**Microinsurance can provide fast and flexible dollars for immediate needs.**

One of the greatest benefits of a parametric microinsurance policy is the speed with which payment can be made. As discussed above, many sources of post-disaster funding take weeks, months, or even years to make their way to impacted households. This can cause serious short- and long-term financial hardship for low- and moderate-income households. Parametric policies, by contrast, can typically pay in a matter of days. They are often connected to bank accounts or mobile money platforms so that money can be swiftly transferred to the insured once a trigger is met. Mobile platforms can reach even low-income households: In 2021, 76% of adults making under \$30,000 annually had a smartphone.<sup>(57)</sup>

Another potential benefit of parametric microinsurance is reduced documentation needs. As discussed above, the inaccessibility of some aid and insurance to those of heirs' property has been one gap in financial recovery in certain communities of South Carolina. A parametric insurance policy can often be written without a title/deed. For example, in interviews, we heard that perhaps a quarter or more of microinsurance policies recently written in Puerto Rico may be for households that had been excluded from traditional insurance markets. That said, this will depend in part on the state insurance regulator. For instance, instead of a typical insurable interest requirement as applied to property policies, parametric insurance regulations may stipulate only one policy per person.

A final benefit associated with this design is higher trust by policyholders. Interviewees stressed that many marginalized communities have lost trust both in government assistance programs and in private insurance markets, believing neither one prioritizes or meets their needs. However, research and reporting has provided initial evidence that households may have higher trust in parametric microinsurance products, especially when offered in partnership with a trusted non-profit or community group. Prior qualitative research has documented how some customers felt a parametric design shifted the power dynamic between the insured and the insurance company, eliminating battles over payouts, as well as red tape, and let the insured determine for themselves their most pressing needs.<sup>(58)</sup>

TABLE 2:

## Microinsurance Benefits and Challenges

	Benefits	Challenges
<b>Microinsurance</b>	<ul style="list-style-type: none"> <li>• Affordable baseline protection</li> <li>• Speed in payout</li> <li>• Flexible use of dollars, including for non-property costs</li> <li>• Reduced documentation</li> <li>• Greater policyholder trust</li> </ul>	<ul style="list-style-type: none"> <li>• Limited payouts</li> <li>• Likely counts as duplication of benefits for FEMA assistance</li> <li>• Some stakeholder concern that use of funds is unspecified</li> <li>• Lack of familiarity among target groups</li> </ul>

### Challenges and Limitations

Microinsurance is only an appropriate tool when smaller amounts of flexible dollars are needed quickly. A key reason that microinsurance policies are more affordable is that they have lower coverage amounts. As such, one drawback is that microinsurance will be unable to fully compensate households when they face substantial post-disaster costs, such as a homeowner with significant property damage. Therefore, microinsurance can never be a replacement for an indemnity property policy that covers the full replacement cost of a home. If this is what is needed, then other policy solutions should be explored, such as public subsidies for lower-income households to afford insurance.<sup>(38)</sup>

Even with smaller coverage levels, it remains the case that the lowest-income households may never be able to afford coverage at all; these households likely have no dollars they can divert from immediate needs to cover even modest premium payments. In these situations, public sector or philanthropic support would be needed to offset costs for households in need. This has been the case globally for many programs providing insurance to very under-resourced households, with public sector or foundation dollars either helping offset the costs of premiums for low-income policyholders and/or supporting program operation and implementation.<sup>(59,60)</sup>

Another challenge is the interaction between a microinsurance program and other existing assistance programs, specifically the potential risk to households becoming ineligible for FEMA's Individual Assistance due to duplication of benefits rules. Interviewees were concerned a microinsurance payout, while perhaps being larger and faster than FEMA assistance, would disqualify residents—particularly the most in need—from further needed support. One approach to ensuring that the funds do not trigger duplication of benefits for the recipient is to put limitations on how the funds could be used—this though, undermines the intended purpose of parametric insurance, which is that the dollars are flexible, and would add substantial administrative complexity. Another solution would be for FEMA to issue explicit guidance that microinsurance policies did not count toward duplication of benefits. This would be easier for insurers and policyholders, but would require FEMA to issue new regulatory guidance.

By design, the funds of parametric microinsurance are not limited to a particular use. As discussed above, disasters can impose wide-ranging costs on households and a parametric product gives each household the flexibility to put the funds to their most immediate or best use, which will vary by household. Whether or not this is problematic depends on

perspective: a few stakeholders interviewed voiced concern that recipients might not use the funds for the “right” purpose. The approach of social programs defining the specific costs assistance will cover is common in U.S. social programs. However, current limitations of recovery fund use in other aid programs leads to many recovery gaps reported above, especially for low-income households. Economic theory has shown that direct cash transfers are more economically efficient as a social support program; the barrier in implementing them continues to be political.<sup>(61)</sup> The flexibility of an unrestricted transfer is how a microinsurance policy is designed to work: the household chooses the most important unmet needs for themselves when facing a financial shock.

Finally, for all forms of disaster insurance, demand tends to be low. This is driven by many factors. This report has stressed affordability as one: for many households, insurance is not a necessary expense and when households do not have extra funds, they will not seek insurance coverage. In addition, however, many households do not know the disaster risks they face or the financial implications should a disaster occur. They may also have low-levels of financial education, specifically around insurance and its role in household finances and risk management.<sup>(54)</sup> Behavioral economics research has also shown that people can be overly optimistic, thinking disasters won’t happen to them, or dismiss low probability risks entirely.<sup>(62)</sup> It is not clear yet whether microinsurance designs would be easier for potential customers to understand and thus increase demand or if the basis risk would be perceived as too large and limit interest.

## Implementation Considerations

**Regulatory frameworks.** Enabling regulations will need to be adopted by state insurance regulators. Globally, these have taken different forms.<sup>(63)</sup> Right now, parametric policies for disasters have only been approved in a handful of states, such as California, Hawaii, Washington, and Florida, and only Puerto Rico has formally recognized microinsurance as its own product class. Recognition of microinsurance as its own product class will likely be essential to greater numbers of products being available to consumers. First, such regulations signal support for the concept and suggest to insurance companies that if they invest in developing such solutions, they will receive regulatory approval. Second, they create the necessary framework to access the benefits of microinsurance, such as speed and flexibility, by providing this product class with alternate approaches to meet key regulations that may not be appropriate for other product classes.

A key challenge for any parametric insurance in the U.S. is that state insurance law mandates that policyholders be indemnified by insurance—policyholders cannot profit from their insurance. With parametric policies, the trigger is often not related to actual losses sustained, creating a conflict with this definition of insurance. In Puerto Rico, the regulator determined that after a severe disaster that would trigger payout of the microinsurance policy, it was inconceivable that a household had not faced economic loss of the level of the small payout. In other states where parametric disaster policies have been approved, such as California, the regulator allowed for a simple attestation of economic loss by the consumer through text messages as a pre-condition for claims payouts. Such stipulations make sense for microinsurance policies with smaller payouts, but could open the door to fraud and speculation if used for higher payout policies—this is why defining microinsurance as its own clear product class with its own regulations can be important. The regulations can also provide consumer protections, such as requirements around readability and transparency of the contracts.

**Parametric microinsurance is fairly new to the U.S. market and there are several implementation and design considerations that need to be addressed before widespread use.<sup>(58)</sup>**

**Product distribution.** Globally, microinsurance has often been distributed much differently than traditional insurance, given that it was designed to reach populations that were not engaging in private insurance markets or where private insurance markets were nonexistent or underdeveloped. In South Carolina, as well, the most efficient and effective methods for providing microinsurance to vulnerable populations could likewise be through new channels. This could include mobile-based products, where both enrollment and payout are done on a smartphone. It could involve coupling microinsurance to other products, such as loans, rental agreements, or receipt of government services. Microinsurance could also be provided by public insurance programs, such as the NFIP or state wind pools.

**Public sector financial support.** Since affordability is central to microinsurance products, the design of new programs or products, as well as premium payments, may need to be supported by the public sector or philanthropic groups. For example, states could make grants available to develop pilot insurance programs. FEMA and HUD could make such programs an allowable use of certain disaster mitigation grant programs. Means-tested assistance for premium payments, while having been suggested for the federal flood insurance program, as noted above, could also be adopted by states. One possible source of funding could be a small fee on other homeowners insurance policies in the state.

The public sector could also design and offer such programs. For example, in South Carolina, the state wind pool or a state agency could implement a microinsurance program limited to those below a certain income threshold. An alternative approach would be for the public sector to harness parametric models to administer a disaster assistance program, such that the delivery of assistance could be based on a transparent trigger and result in faster payouts of a set amount to help households with immediate recovery needs. This could speed up delivery of assistance by using both a parametric-type trigger and pre-defined eligibility criteria to move payments rapidly to those in need.

**In all group disaster insurance models there is an intermediary organization between the household and the insurance company.**

## Group disaster insurance models

### Overview

Several new models of insurance have emerged that involve another institution acting as an intermediary between the insurance firm and the policyholder, designed to help secure coverage on behalf of a group. These group-based models have gone by many terms globally, perhaps generating some confusion as to the specific designs and approaches. In all of them, there is an intermediary organization sitting between the individual or household and the insurance firm. Many different organizations could play this role and they may undertake diverse activities in the chain of insurance. Some simply facilitate insurance coverage for a certain group, other times the intermediary may engage in premium collection or claims management—these different institutions and roles have led to different terms. Globally, have often been called meso-insurance models or aggregator models (referring to the intermediary institution as the “aggregator”). When the intermediary institution is a local government or public entity, this has been termed community insurance or community based catastrophe insurance,<sup>(64)</sup> and when the public entity is focused exclusive on floods, it has been called community based flood insurance.<sup>(65,66)</sup> Here, we refer to all of models with an intermediary playing a role in securing insurance for a collection of people or households “group disaster insurance.”

Two primary arguments have driven the development of group disaster insurance models. First, demand for disaster insurance (indeed all insurance) can often be low. This is caused by many factors, as discussed above. Affordability, stressed in this report, is a key suppressor of demand, but there are many others. People may not understand the risk they face or the financial impacts of a disaster. They may not understand insurance or the role it plays in managing financial risk. Households may be overly optimistic about disasters or other biases may influence their decision-making.<sup>(67)</sup> They may not trust insurance firms or products may not meet their needs. Finally, many deprioritize insurance purchases, since paying for something one hopes to never use is not an enjoyable purchase. Low demand for insurance has led governments to sometimes mandate coverage. In the absence of insurance purchase mandates, however, new designs in which another organization secures insurance coverage, could lead to wider coverage in the population, improving financial resiliency post-disaster.

The second driving factor has been that insurance companies are often removed from the neediest households and communities. They may not have accurate understandings of what the specific post-disaster financial needs are for these groups or their perceptions of insurance and how they may influence use of risk transfer. Other organizations that are closer to these populations are in a better position to identify needs and the potential solutions that may meet them.

There are two broad types of group insurance. In the first, the intermediary institution arranges or purchases individual insurance policies for a group of individuals or households. In this model, the intermediary institution negotiates terms with the insurance company and may also provide full or partial payment, but the contracts are individually held by the person or household directly with the insurance firm. This would be akin to group health insurance, such is often arranged—and also sometimes partially subsidized—by an employer. This model could also involve the intermediary coupling insurance to other products or programs. An example could be a Community Development Finance Institution (CDFI) attaching insurance to loans it makes to lower-income borrowers to protect both them and the CDFI from disaster-driven defaults.<sup>(68)</sup> Another example could be a farmer's cooperative purchasing policies for members or a public-sector entity purchasing policies for a group of beneficiaries of a particular program. The intermediary institution may subsidize the cost of insurance for some or all policyholders and it may also provide complementary programs or services, such as risk education, financial literacy training, or financial support and guidance for risk reduction investments.

In a second design, the intermediary institution purchases an insurance policy and uses the payouts to support the post-disaster needs of a group of individuals or households. In this case, the intermediary institution is the policyholder and the individuals or households served do not have their own insurance contracts. This model is more akin to the intermediary using insurance themselves to finance a disaster-assistance program. This approach is now being piloted by a housing-focused non-profit in New York City, to help disaster-impacted households they serve with immediate post disaster needs.<sup>XXII</sup> In this model, the funding would likely not come directly from those served, but from other sources, such as philanthropy or the public sector. The intermediary, as in the prior case, may also provide additional disaster-related services.

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XXII For more information, see: <https://www.edf.org/inclusive-insurance>.



## Potential Applications and Benefits

**Group disaster insurance can expand the number insured, improving their recovery.**

The first potential benefit of a group model is that it can help close the disaster insurance gap, or the share of losses not covered by insurance. All group insurance models expand the number of individuals or households insured, thus expanding financial protection. In one model, is this done by the intermediary essentially force-placing the coverage, providing it to all members of the group without members having to voluntarily opt-in to purchase. In other model, the intermediary encourages or subsidies purchase. Disaster insurance provides documented benefits to households, improving and speeding their recovery, giving them the needed financial funds to cover a range of disaster-related expenses, and preventing households from becoming more financially precarious.<sup>(9,44,69,70)</sup> Greater penetration of insurance might also provide spillover benefits to others in the community, helping to protect local economies.<sup>(9,71)</sup>

The flexibility in the design structures for group disaster insurance models mean it can be tailored to meet many different needs. It could be structured to expand baseline disaster insurance coverage to ensure all members of a group have some funds to jumpstart their recovery. For this purpose, the insurance would pay each individual or household only a modest amount but make it universally available to those impacted. Essentially, the policy would be a microinsurance policy—a small and immediate payout—but provided more widely through the intermediary. This could be seen as part of a layering approach to disaster insurance, with individual households then purchasing higher-deductible policies for greater levels of coverage as they need and can afford.<sup>(66)</sup> Alternatively, if structured more similarly to group health insurance, a larger, indemnity policy could be provided. In this case, the benefit would again be more universal disaster insurance coverage, but would also make available complete resources for rebuilding. This application of the group insurance model, however, would not address the challenge of affordability of indemnity policies.

A group disaster model also provides an easy vehicle for an organization to cost-share insurance premiums with the benefiting policyholders. The intermediary could use other funds—grant funds or general revenues, for example—to reduce the premium costs to certain members of the group (such as those below an income threshold) or to all beneficiaries, helping address challenges of affordability. This may be most likely when intermediaries are organizations whose own mission can be partially achieved by securing the insurance. This could include a disaster recovery NGO, a non-profit helping to protect lower-income households from deeper financial hardship, a lender looking to protect itself against disaster-driven defaults, or a local government interested in assisting its most vulnerable citizens.

A group model can be useful in situations where there is widespread distrust in other forms of disaster finance or assistance. When intermediaries are institutions that already have deep trust in a community, such as a community group, a respected non-profit, an aid organization, or a local government closer to the residents, that trust can help in introducing a new concept and product. It also can help ensure that the insurance solution matches the needs of the beneficiaries; since the intermediary is close to those benefiting from the policy, they can adjust the design as needed to reflect the needs of the recipients. One interviewee noted that programs tend to be less useful when “balcony level people are making decisions for dancefloor level people;” when the people on the dance floor, however, are engaged to ensure their support, a policy would be better designed and used.

When the group model is specifically designed as a wider, parametric microinsurance product, adding the group structure can help overcome potential basis risk. If the insurance payout goes directly to the intermediary, they could develop mechanisms to distribute funds to those with the highest needs. That said, care would need to be taken in these designs to make sure that needs assessment and enrollment in the program did not delay payments. If the design instead had more complete policies directly between the insurance firm and the household, basis risk would not be a concern.

Finally, for cases where the intermediary is a local government or other public sector entity, there is the potential that a group policy could provide greater financial incentives for investment in community-level risk reduction. If the local government faces one aggregate premium (even if partially or fully paid for through assessments on residents), that could provide incentives for community-level investments in risk reduction and climate adaptation, if those investments secured lower premiums.<sup>(66,72)</sup> Two recent reports have estimated that investments in risk reduction (ecological forestry and levee setbacks respectively) can be more than paid for through premium reductions if an institutional arrangement, such as community insurance, were available to harness those premium reductions.<sup>(73,74)</sup>

TABLE 2:

## Group Insurance Benefits and Challenges

	Benefits	Challenges
<b>Group Disaster Insurance</b>	<ul style="list-style-type: none"> <li>• Close disaster insurance gaps</li> <li>• Flexible design to meet myriad needs</li> <li>• Allows for easy cost-sharing of premiums</li> <li>• Higher trust among insureds</li> <li>• Higher likelihood of meeting needs</li> <li>• Potential for financial incentives for risk reduction</li> </ul>	<ul style="list-style-type: none"> <li>• Limited interest by intermediaries; they must have resources, time, and expertise in insurance</li> <li>• Ongoing challenges with affordability and distribution of costs</li> </ul>

## Challenges and Limitations

A first challenge with group models is that they typically require a high-capacity institutional intermediary. Many institutions which might seem to be a good potential fit for playing an intermediary role have very little knowledge or experience with disaster insurance markets. For example, a community group or a mission-driven lender may not be aware of the disaster risks faced by their clients or stakeholders, may not appreciate the role disaster insurance could play in recovery, and may be unfamiliar with insurance market players and dynamics. Beyond lack of knowledge of insurance, many potential intermediary organizations do not have the necessary expertise, resources, or staffing to play a substantial role in insurance provision. The group models vary in the degree of administrative burden placed on the intermediary, but all do require a minimum amount of time and investment in solution design and implementation that many may not be in a position to assume.

A second challenge is that even with group models, affordability can remain a concern. As with all disaster insurance, motivating payment of premiums is a challenge, as well as achieving affordability when targeting lower-income groups. For a group policy, it is

possible that a broadening of the risk pool could help reduce costs by introducing greater diversification, but it is equally possible that the group targeted would all be in a small geographic area prone to the same hazards, concentrating risk. In some group models, the beneficiaries would fully or partially pay for the insurance. This can create logistical challenges in how to collect the premium, depending on the relationship between the aggregator and the beneficiary; for example, this would be fairly straightforward for a lender, but difficult for a community group or some non-profits. A question has also been raised as to whether any premium payment would be risk-based to be both a signal on risk and a financial incentive for risk reduction to the beneficiary. Paying the premium can also create political problems: local governments and other public sector entities may not want to assess taxes or fees to pay for an insurance product for which there may be little demand. Finally, as with other types of insurance, if targeted at the lowest-income, premiums will likely have to be cost-shared with the public sector or philanthropic groups. Sustaining support over many years for insurance has proven difficult in practice.

**As with microinsurance, group models are new to the market and will often require cross-sectoral partnerships.**

## Implementation Considerations

**Regulatory guidance.** There are multiple ways to structure group insurance models, but all would benefit from regulatory guidance. While some structures have regulatory analogs and would likely not create regulatory challenges—such as models similar to employer provision of health insurance or attaching an insurance product to a loan—others that involve the intermediary purchasing the insurance or playing a role in claims disbursement, for example, may raise questions. Globally, risk transfer models such as this have often been executed as financial derivatives. While structured like insurance, they are regulated as a financial product and not an insurance product. Such products, such as catastrophe bonds on a larger scale, have been used in the United States, as well, but smaller products and more varieties in structure are newer. Financial regulation may not be as appropriate for these approaches, since they are designed to function like insurance and provide financial assistance following a costly disaster; they are not designed to be speculative investments. Such a regulatory change, however, would likely require legislation.

**Determining the intermediary.** There are many different types of intermediary institutions, as already discussed, and they each face their own unique implementation challenges. Many are not in position to either act as a purchaser of insurance or a distributor of funds, limiting the types of group insurance models they could adopt. Others may have no mechanism for collecting beneficiary payments toward insurance, limiting them to a model of direct assistance financed by other sources. This may limit the specific models that are viable for them. Context-specific work will be needed with multiple partners to work through the variety of challenges that could arise and in determining the most appropriate design. This will likely involve dedicated consultative work with risk transfer experts.

**Flood insurance specific considerations.** If focused on flood insurance, in the United States, any model would need to be considered in light of the NFIP and the mandatory purchase requirement. Two reports have investigated design structures in which a community policy could either provide an initial base level of coverage, with residents purchasing additional coverage through the NFIP, or provide full indemnity flood policies.<sup>(65,66)</sup> In this case, additional implementation questions arise, such as whether the program is a complement or a substitute for the NFIP, and if coverage would satisfy the mandatory purchase requirement. Addressing these specific issues will again require context-specific work in appropriate program design and development.

## 5. CONCLUSION

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The escalating risk of coastal and inland flooding in South Carolina, driven in part by sea level rise and increasingly frequent extreme storms, poses an economic threat to households. These disasters can be negative financial shocks, imposing a range of expenses and possibly interrupting income. Research shows that low-income communities and communities of color are more at risk of economic harm from climate-related disasters, driven in part by disparities in access to financial recovery resources including savings, loans, federal aid, and insurance.

In South Carolina, many sources of recovery are insufficient or inaccessible. Households often have inadequate amounts of liquid savings and lower-income households may not be able to access credit. Federal aid is limited and can have substantial delays in fund dispersal. The needs of renters and rural residents are not well met in current program structures. There is a particular challenge of accessing recovery resources for households with heir's property, as many programs and insurance companies require formal ownership documents. Disaster insurance can often be dispersed more quickly than aid but is often unaffordable for low- and moderate-income households.

Research has documented that those with disaster insurance recover better and faster than those without insurance. Expanding access to disaster coverage, then, is one key tool for increasing financial resilience. New innovative types of disaster insurance can expand access and affordability and meet other documented needs in recovery, such as for non-property costs. In this report, we have outlined how two insurance structures new the U.S. residential insurance system—micro-insurance and group disaster insurance—could provide some benefits over traditional insurance structures for households with unmet needs.

To be effective, state and local leaders will need to design the particular insurance program carefully in light of the specific population, context, and existing programs. This report provides a guide for decision-makers in South Carolina to assess the benefits, challenges, and implementation considerations of these two new insurance models. Both microinsurance and group disaster insurance offer mechanisms to provide insurance to populations currently not engaged in the insurance system but offer different levels of financial support and with different benefits. While micro-insurance can increase consumer transparency and trust, it cannot protect against severe damage; while group disaster insurance can increase take-up, it requires significant management resources. For decision-makers considering innovative insurance programs, it will be most important to match program design to specific needs.

Neither of these novel insurance designs is a silver bullet for fixing inequitable disaster recovery. No one insurance solution can provide economic resilience to all households, or cover all the financial recovery gaps in South Carolina, but many innovative designs can start to provide some groups more economic protection from climate disasters.

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