



Inclusive Insurance for Climate-Related Disasters

Brief

Financially Protecting the
Unserved and the Underserved
against Climate Disasters

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Insurance needs to work for everyone, but worsening climate disasters are further exposing a glaring—and growing—coverage gap. Climate disasters are disproportionately affecting low-income communities and people of color, yet these communities have the least access to disaster insurance. It’s an issue that needs to be addressed by federal, state, and local regulators urgently.

Despite the challenges to developing a more inclusive insurance system, new analysis from a report commissioned by Ceres, *Inclusive Insurance for Climate-Related Disasters: A Roadmap for the United States* written by Carolyn Kousky and Karina French, outlines approaches to providing equitable access for insurance coverage for disasters in the U.S.

The report offers a framework for expanding the financial protection of insurance against climate disasters to those whose needs are not currently met, and recommendations for how insurance for climate-related disasters can be made more inclusive in the U.S. These are based on interviews with disaster recovery and climate justice organizations, insurance law experts, state and federal insurance regulators, and insurers, along with the latest research on household financial exposure to climate disasters and historical and current insurance limitations.

The term inclusive insurance has typically been used to describe programs that bring risk transfer to lower income households in emerging economies, often limited to microinsurance designs. While the U.S. has a relatively well-developed property and casualty insurance market, there are still many households that cannot access or afford disaster insurance coverage here, as well. An inclusive insurance system in the U.S. would enable access to groups generally excluded or underserved by the insurance market (see the box on page 4 for a more comprehensive definition).

To move to a more inclusive disaster insurance system and respond to the accelerating climate disasters, Ceres recommends that U.S. federal, state, and local regulators, along with the private sector, adopt new policies, regulatory changes, and products, including:

- New types of insurance coverage such as parametric, micro, and meso- or group insurance, in both private and public markets
- Subsidies by the public sector and the philanthropic sector for the most vulnerable households
- A “Community Reinvestment Act” for the insurance sector to extend insurance coverage to the unserved and underserved
- Public/private partnerships to support community-based insurance models and disaster mitigation programs
- State insurance regulations that enable the innovative insurance product designs
- Regulatory reform to simplify insurance claims processes and make insurance coverage more transparent
- Mandated data disclosures on insurance coverage and claims data for research purposes
- New research on regulations that prevent indirect discrimination in insurance

Introduction

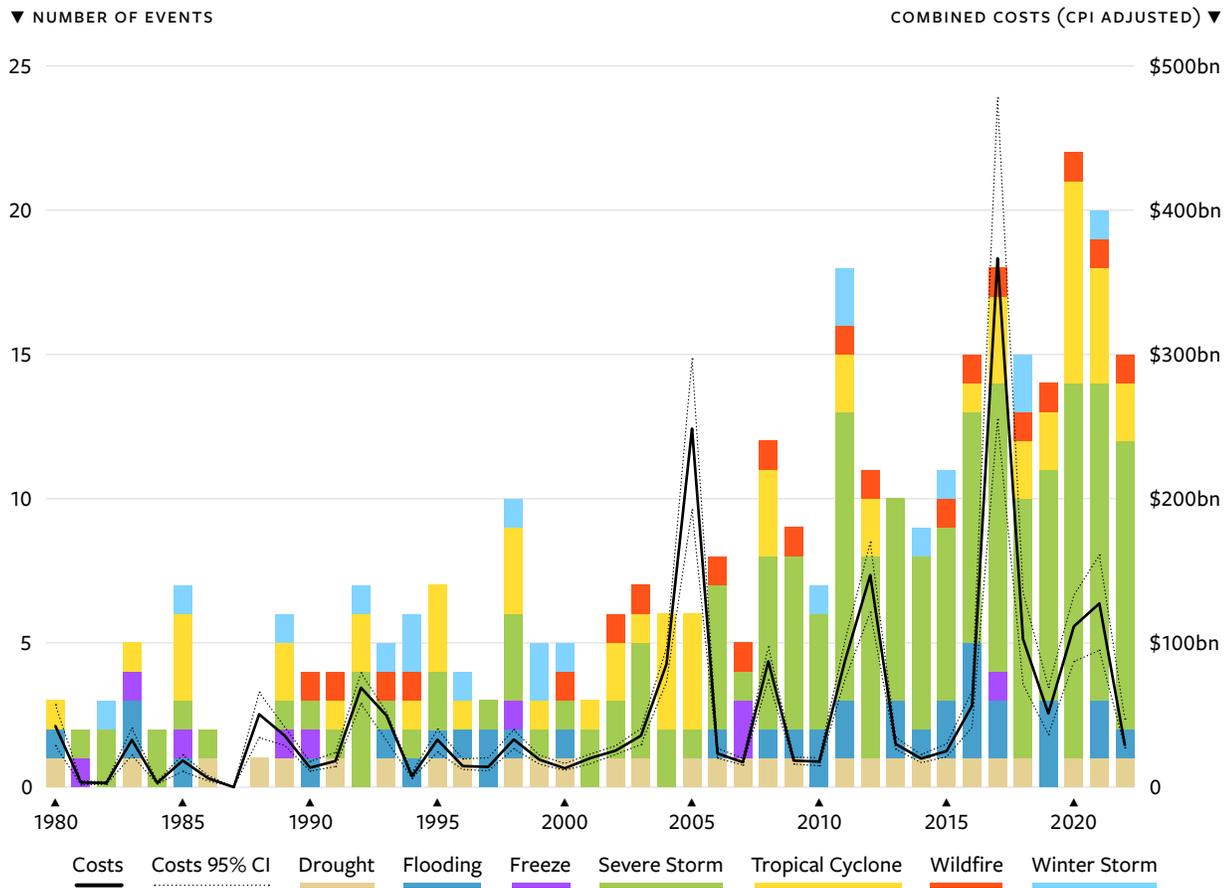
Climate scientists predict worsening and more severe hurricanes, growing numbers of extreme rainfall and snowfall events, longer and more intense heatwaves and drought, sea level rise and consequent flooding, and higher wildfire risk. The economic costs of large disasters, as measured by the National Oceanic and Atmospheric Administration (NOAA), have grown steadily over the last half century; in the last five years, large disasters on average cost the U.S. close to \$150 billion annually in direct, quantifiable economic impacts—a record amount (see Figure 1). **Over the last decade to 2021, these large disasters cost the U.S. at least \$1 trillion in total.**

The widespread damage from climate-related disasters includes:

- Damage to property, contents, and vehicles
- Evacuation expenses and emergency supplies
- Fuel, generators, or other tools to compensate when power or water is lost
- Higher commuting costs
- Debris clean-up
- Lost income
- Damaged infrastructure and public buildings
- Business interruption

Research in the referenced report has shown that people with low incomes and people of color are disproportionately harmed by disasters, a consequence of increased exposure and vulnerability due partially to redlining, historical underinvestment in community protections, and generational wealth gaps. Many households have insufficient savings, lower access to credit, and cannot rely on disaster aid that is slow to disperse and insufficient for recovery. Without the funds to cover disaster costs, households may have to divert funds away from critical spending, such as healthcare, or turn to predatory lenders. They can exhaust any savings for retirement, medical needs, or education, leaving them more financially precarious.

Figure 1 · Costs and Frequency of U.S. Billion-Dollar Climate Disasters



Note: Costs are a summary of government expenditures, insurance claims, and economic losses. For more detail see NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2022) at <https://www.ncei.noaa.gov/access/billions>.

Research, however, finds that those with insurance tend to have better recovery outcomes than those without. Unfortunately, too many people find they cannot afford disaster insurance, that the products being offered do not fit their needs, or that the insurance claims process has delays and inequities. **Far too often, those who need insurance the most are the least likely to have it.**

What Is Inclusive Insurance?

“Inclusive insurance” refers to any program or policy that makes insurance coverage more available and affordable to those previously locked out of the insurance market.

Inclusive Insurance for Climate-Related Disasters defines it as *policies, programs, and products that make appropriate and affordable insurance available to those unserved or underserved by the market*. Inclusive insurance may be the development and offering of new types of insurance products, but it may also be changes in regulation, new public policies and programs, or new types of cross-sector partnerships.

Financial Resilience and Climate Disasters

While financial resilience is a distinct concept from financial hardship or poverty, it is determined not just by wealth or income, but also by a household's ability to survive unexpected expenses or drops in income. These represent a larger percentage of a lower income household's available resources and there is less likelihood of access to other funds. **Research has shown that low- to moderate-income households are more likely to experience financial shocks and are less likely to have sufficient reserves to cover them.**

This research was validated in interviews with community leaders conducted for *Inclusive Insurance for Climate-Related Disasters*. As documented in the report, community leaders dealing with disaster recovery said that for low-income households with very few available resources, recovery is slow, which greatly increases costs and the emotional burden.

What Is Financial Resilience?

“Financial resilience” refers to the ability to withstand a negative shock to one's income, wealth, or expenditures. For households, financial resilience is a function of many factors, including income and wealth, savings, debt obligations, money management practices, financial literacy, and insurance coverage. A common measure for examining financial resilience is whether a household has sufficient access to funds to cover a financial shock of a certain magnitude.

According to other stakeholder interviews documented in the report, the instability and cost of post-disaster housing is one of the main causes of financial and emotional stress for low-income households; the most frequently cited recovery challenges from stakeholders were reductions in affordable housing stock, increases in rental prices, and displacement from housing due to rent increases.

Problems with federal disaster aid

- Confusing and limited eligibility rules, application, and appeals processes
- Problematic damage assessments and property valuation
- Delayed delivery
- Grants that are too small, averaging only around \$3,400 between 2018 and 2022
- Unfair distribution: from 2010 to 2022, FEMA grants to households were authorized in only just under 43% of major disaster declarations, while assistance to local governments was authorized in 97% of declarations (calculated by the *Inclusive Insurance* report authors using publicly available disaster declaration data available on OpenFEMA).
- The need for significant documentation, which may not be available following a disaster
- The availability of documents in English

The Current State of Climate Disaster Insurance

Many households lack coverage against climate disasters—policies are expensive, and coverage may not be widely available—and this has led to the public sector playing an outsized role in ensuring the availability and affordability of disaster insurance.

Climate disasters do not fit the typical insurance model. When losses are pooled in a group, everyone can contribute a modest amount each year and those funds are available to whomever experiences a negative event. **It is easy to see that pooling risks does not work for losses where everyone is hit at the same time, like natural disasters.**

To deal with this situation, insurers need access to capital to pay multiple claims that follow a disaster. This can be done through reserves, reinsurance, and financial risk transfer mechanisms—but all of those impose costs on the insurer, which are often passed on to policyholders; one of the pieces that makes disaster insurance expensive. This outcome is what has led to the coverage for flood and earthquake damage being excluded from almost all standard homeowners' property policies.

In response to this gap in the private disaster insurance market, the public sector has stepped in, with many states along the Gulf and East Coast offering separate flood and hurricane and wind coverage. Similarly, in California, as private insurers are pulling coverage from areas of high wildfire risk, more households seek wildfire coverage through the state's Fair Access to Insurance Requirements (FAIR) plan, a program that offers wildfire insurance to those who cannot find coverage in the market. However, such plans are often expensive and typically do not provide the same level of coverage.

How Is Insurance Regulated?

In the U.S., insurance is regulated at the state level, overseen by an insurance commissioner. State insurance offices seek to promote insurer solvency, protect consumers, and oversee market conduct. State insurance offices also license agents and brokers to sell insurance. Most states have regulations that rates charged must be adequate (sufficient to cover losses), not excessive (unfairly high for the consumer), and not unfairly discriminatory (similar risks should face similar premiums).

While insurance is regulated at the state level, there is a Federal Insurance Office (FIO) in the U.S. Department of the Treasury. This office monitors, among other efforts, whether underserved communities and consumers have access to affordable insurance.

The unaffordability of disaster insurance is one of the primary barriers to a lack of insurance coverage. Many stakeholders interviewed for the report emphasized that low-income households cannot afford additional disaster insurance that is not included in homeowners' policies over other necessary costs such as housing, utility, or auto payments. While renters' insurance is less expensive than homeowners' insurance coverage, it also does not require flood damage coverage and may not cover temporary living costs of post-disaster rentals—insurance coverage for any of these items is often simply unaffordable.

What Is Direct and Indirect Discrimination in Insurance?

Direct and indirect discrimination in insurance can occur in pricing, underwriting, claim approvals, claim amounts, or processing time. Direct discrimination in insurance occurs when practices are based on inherent and protected aspects, such as race, income, or gender. Indirect discrimination in insurance occurs when these protected factors are not used directly, but outcomes still vary. This is also referred to as disproportionate impact or discriminatory effect.

The use of the word “discriminatory” in insurance, however, is typically used to refer to differentiations based on risk and not social factors. As such, state laws prohibiting insurance rates that are “unfairly discriminatory” are interpreted to prevent any pricing that does not reasonably correspond to differences in expected insurance costs; they do not prevent differential pricing based on aspects of individuals that society may believe are protected and not to be used in pricing or underwriting, regardless of differentials in risk.

Low-income households often need protection against financial shocks the most. Many private insurance companies may not see a profit potential in inclusive products or approaches. The authors heard in interviews that low profit margins and unfamiliarity with the needs of the target population might make insurers unwilling to invest in new product development; a situation that is exacerbated when insurers face a regulatory and policy environment that they believe will be at worst hostile and at best indifferent. In addition, many non-property losses are often not covered by traditional insurance, while these costs—such as buying generators, fuel, or bottled water; clean-up of sewage overflows or broader debris; loss of affordable transportation options when public transit is down; family displacement; or higher rent—are often as substantial as those related to property damage.

Insurance Innovations That Might Help Inclusive Insurance

In response to these escalating climate risks and policy pressure to bring the financial benefits of insurance to populations left out of the market, new policies, models, and approaches are being introduced by regulators, insurers, and NGOs for protecting those most in need against climate-related shocks. The table below highlights some promising approaches:

Figure 2 · Promising Approaches to Inclusive Insurance

Type	Definition	Benefits
Parametric insurance	Rapidly pays a set amount based on an observable disaster measure, referred to as the trigger. For example, the trigger could be the height of flood waters as read on a certain gauge or wind speed in a certain location.	Parametric insurance is fast and flexible. It might work well for renters.
Microinsurance	“[I]nsurance 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 .”	Microinsurance is low-coverage, low-premium, and for low incomes. Premiums are often subsidized by the public sector or charities.
Aggregator or meso-insurance	Where an institution, referred to as the aggregator, secures insurance on behalf of a group. The aggregator could be a community group, a non-profit, or a government agency.	Group purchases can lower administrative costs and reduce adverse selection. Individuals and households do not have to find and apply for coverage for themselves.
Mobile insurance	Where claims are deposited into a mobile money platform so insurance can reach even the unbanked, a category that covers around 5% of the U.S. population.	Mobile insurance can easily handle small transactions.

Five Principles of an Inclusive Insurance System

- 1 **Affordable:** All people have access to affordable insurance: risk transfer mechanisms for financial security that match their capacity to pay. This could be achieved through new product designs, business models, public sector programs, or public sector or philanthropic support of premiums.
- 2 **Accessible:** People can engage with insurance markets easily and products are designed to deliver payments smoothly. Policy information is available in multiple formats, such as online, print, and through mobile platforms, as well as in one's native language.
- 3 **Transparent:** Policy terms and the claims processes are transparent, simple, and easy to understand without any policy details hidden in fine print, and market data is available for public and academic research.
- 4 **People-centered:** Insurance is centered around the specific financial security needs of individuals and households, taking into account what type of financial protection would be most valuable to different groups, making sure the burden of administrative processing does not fall completely on the consumer, and minimizing firms' incentives for claims denial.
- 5 **Just:** Availability, rates, responses, and payments are fair. Insurance costs and underwriting do not differ based on federally or locally protected characteristics and minimize unjust differential impacts.

Recommendations for a More Inclusive Insurance System

The table below summarizes the key recommendations for developing an inclusive insurance outlined in *Inclusive Insurance for Climate-Related Disasters: A Roadmap for the United States*.

Figure 3 • Actions for a More Inclusive Insurance System

Federal or State Policy	Regulatory Reform	Local Government Programs	Private Sector Offerings
<p>Subsidize disaster insurance for low-income households and/or mandate disaster coverage backed by federal reinsurance</p> <p>Mandate data disclosures from insurers for research</p> <p>Create a Community Reinvestment Act for insurance</p> <p>Provide grants to support inclusive insurance pilot programs</p>	<p>Develop enabling regulations for inclusive insurance models</p> <p>Establish inclusive disaster insurance regulatory sandboxes</p> <p>Reform claims contestation procedures</p> <p>Establish complexity and baseline coverage standards</p> <p>Support research on potential direct and indirect discrimination in disaster insurance markets</p>	<p>Subsidize disaster insurance for low-income households</p> <p>Provide insurance consultations to households</p> <p>Develop community-based models for inclusive insurance</p>	<p>Expand offerings to include accessible insurance products</p> <p>Provide discounts and transparency for disaster mitigation</p>

The full report provides further discussion of these solutions and recommendations, as well as providing comprehensive detail on how to achieve them through a variety of alternative approaches, partnerships, programs, and actions.

What Is the CRA?

The Community Reinvestment Act (CRA) was adopted in 1977 to address the underinvestment and lack of services provided by banks to low-income communities. The CRA is implemented by federal regulators that assess the extent to which each bank is providing services to all segments of the community in which they operate, including lower income neighborhoods. It awards banks a CRA rating. Regulators must consider this rating in evaluating applications for charters, bank mergers, acquisitions, and new branch openings.

Conclusion

The increasing frequency and severity of natural disasters due to climate change poses a real economic threat to households, businesses, and communities in the U.S. Our existing tools for covering financial shocks from climate disasters (such as using savings, loans, federal aid, and existing insurance structures) are limited and largely inadequate to protect these populations. It is, unfortunately, the case that while insurance can provide support to households quickly and is associated with better recovery outcomes post-disaster, it remains largely inaccessible or unavailable for too many populations and post-disaster needs.

Making our disaster insurance system more inclusive is a critical component of protecting the economic and overall well-being of at-risk residents. This requires new policies, programs, regulations, offerings, and partnerships that address the challenges endemic to disaster insurance markets, especially with increasing climate risk. These must also break down the barriers to insurance markets that have historically excluded many of the populations that would benefit the most from insurance.

This brief summarizes a report commissioned by Ceres, *Inclusive Insurance for Climate-Related Disasters: Roadmap for the United States*, written by Carolyn Kousky, PhD, Associate Vice President for Economics and Policy, Environmental Defense Fund, and Karina French, Manager, Climate Resilience Research, Environmental Defense Fund. The authors undertook this research while they were at The Wharton Risk Management and Decision Processes Center, completing it after their move to the Environmental Defense Fund. Ceres is grateful for the authors' time and dedication and for the support from Wharton Climate Center and EDF of this important research and accompanying recommendations. This summary was adapted from the report by Paul Hodgson.

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Photo by Leandro Lozada/AFP via Getty Images.

About Ceres

Ceres is a nonprofit organization working with the most influential capital market leaders to solve the world's greatest sustainability challenges. Through our powerful networks and global collaborations of investors, companies, and nonprofits, we drive action and inspire equitable market-based and policy solutions throughout the economy to build a just and sustainable future. For more information, visit ceres.org and follow [@CeresNews](https://twitter.com/CeresNews).

About Ceres Accelerator for Sustainable Capital Markets

Ceres is a nonprofit organization working with the most influential capital market leaders to solve the world's greatest sustainability challenges. The Ceres Accelerator for Sustainable Capital Markets is a center of excellence within Ceres that aims to transform the practices and policies that govern capital markets to reduce the worst financial impacts of the climate crisis. It spurs action on climate change as a systemic financial risk—driving the large-scale behavior and systems change needed to achieve a net zero emissions economy through key financial actors including investors, banks, and insurers. The Ceres Accelerator also works with corporate boards of directors on improving governance of climate change and other sustainability issues. For more information, visit ceres.org and ceres.org/accelerator and follow [@CeresNews](https://twitter.com/CeresNews).

About the Environmental, Social and Governance (ESG) Initiative at the Wharton School

The mission of the Environmental, Social and Governance Initiative is, consistent with the vision of Joseph Wharton, to harness the power of business to “solve the social problems incident to our civilization.” The ESG Initiative conducts research that investigates the intersection of ESG factors and business and further advances Wharton's best-in-class education of current and future practitioners, enabling them to serve a world undergoing tremendous change.

About the Environmental Defense Fund

One of the world's leading international nonprofit organizations, Environmental Defense Fund (edf.org) creates transformational solutions to the most serious environmental problems. To do so, EDF links science, economics, law, and innovative private-sector partnerships. With more than 3 million members and offices in the United States, China, Mexico, Indonesia, and the European Union, EDF's scientists, economists, attorneys and policy experts are working in 28 countries to turn our solutions into action.

Appendix: Case Studies

Policy Case Study: Puerto Rico's Parametric Microinsurance Market

Hurricane Maria was the worst storm to hit Puerto Rico in 80 years; it was the third most costly hurricane in U.S. history and caused the highest mortality in 100 years. It had devastating effects on households in Puerto Rico, many who have dealt with slow recoveries in the subsequent years. In 2020, Puerto Rico's insurance commissioner introduced specific regulations to define microinsurance for catastrophic risk and provide it with its own regulatory framework.

Goal: To make available smaller insurance products for low- and moderate-income households that have a lower premium, are easy to understand, and deliver claim payments quickly after a catastrophic event.

Design: Microinsurance policies received their own regulatory definition and framework. To qualify (if covering one catastrophic risk), premiums could not 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.

Key Aspects of Implementation:

- **Defining microinsurance:** Microinsurance could be defined based on coverage levels, premiums, or intended consumers. Regulators in Puerto Rico decided to define microinsurance based on premium amount, because it was simpler and easier to understand.
- **Premium thresholds:** The premium threshold was set based on internal research on people's willingness to pay for insurance and targeted to income groups of policy concern. The regulations also noted only the maximum threshold, not the intended price.
- **Proof of loss:** All insurance products in the U.S. must typically have a "proof-of-loss" requirement to show that the claims payment is indeed indemnifying a loss—a key definition of insurance. In Puerto Rico, the new regulations waived proof-of-loss for microinsurance since it was felt that the payouts were small and if a catastrophic disaster hit the island, it was inconceivable that the policyholders would not have at least that much economic loss. This enables faster and easier payments for microinsurance.
- **Attracting insurers:** For other insurance in Puerto Rico, there is a requirement that insurers must retain some risk locally. This was removed for microinsurance, enabling global risk transfer to support the emerging market.
- **Consumer understanding:** Microinsurance policy documents must be written concisely and plainly, no more than four pages long, to aid transparency.

Policy Case Study: Portland, Oregon’s Flood Insurance Savings Program (FISP)

In response to complaints from residents of a low- and moderate-income neighborhood about the rising costs of flood insurance, the Portland Housing Bureau adopted an innovative pilot program in 2017 and 2018 called the Flood Insurance Savings Program (FISP).

Goal: To lower the costs of flood insurance for residents, ensure their flood insurance was tailored to their needs, and support home improvements for flood mitigation and broader safety.

Design: FISP worked directly with households to do three things: (1) potentially lower their flood insurance premiums through application of an elevation certificate, (2) improve their insurance policies through one-on-one insurance consultations with a flood insurance expert to help “right-size” insurance and fix errors in policies that led to many residents paying more than they needed to for flood coverage, and (3) provide home assessments that identified health, safety, and flood mitigation measures that could stabilize someone in their home and help link them to funding for such measures. The program helped 91% of participating residents save money on flood insurance at an average amount of \$720 annually.

Key Aspects of Implementation:

- **NFIP pricing:** The prior approach to setting prices in the National Flood Insurance Program relied on elevation certificates, but these could cost homeowners up to \$1,000. Without these certificates, homeowners could end up paying far too much for their flood insurance. The city was able to work with a local non-profit and arrange for bulk certificates to bring down costs. They paid directly for them for the lowest income houses and offered this reduced rate to households with greater income.
- **Understanding your risk:** The city hired a deeply knowledgeable insurance agent to work with consumers. She found that roughly half of policies she reviewed had errors or could have received a lower rate by including an elevation certificate, adopting cost-effective mitigation, or switching to a private provider. This led the city to advocate for greater continuing education requirements for flood insurance agents, which the state of Oregon adopted.

Policy Case Study: Center for NYC Neighborhoods Parametric Meso-Insurance Pilot

New York City is experiencing increased flood risk from extreme precipitation events as the climate warms. A pilot project, funded by the National Science Foundation's Civic Innovations program, is testing a new approach to risk transfer that would help provide immediate cash assistance to low-income households in need after a flood. This represents a unique public-private partnership between the New York City Mayor's Office of Climate and Environmental Justice, reinsurance company Guy Carpenter, and nonprofits, including the Environmental Defense Fund, the Center for NYC Neighborhoods, and SBP.

Goal: To increase the financial resilience of low- and moderate-income residents to flooding from extreme precipitation.

Design: In the pilot, the Center for NYC Neighborhoods will purchase a novel parametric product, designed to pay when rainfall-related flooding exceeds certain inundation thresholds in high-risk areas with a large share of LMI low- and moderate-households. The Center will then use those funds to finance grants to meet household emergency needs.

Key Aspects of Implementation:

- **Defining need:** There are many unmet financial needs after a large flood and this one pilot could not solve them all. The project team decided to focus on the challenges low-income households face when their immediate post-disaster financial needs are not met, which can lead to a downward financial spiral.
- **Trigger choice:** Parametric insurance provides enormous flexibility. Rainfall-related flood triggers are new to the market. The team evaluated many technology and data options, ultimately settling on a trigger related to a modeled footprint of the flood based on a combination of satellite data and on-the-ground sensors installed by FloodNet, a cooperative of communities, researchers, and NYC government agencies working to better understand flooding in New York City.