



## RESEARCH BRIEF SERIES

# MITIGATION MATTERS

## AWARD RECIPIENTS

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AWARD AMOUNT:  
\$2,500

*FEMA defines mitigation as the effort to reduce loss of life and property by lessening the impact of disasters. Effective mitigation requires that we all understand local risks and invest in long-term planning to reduce risks and enhance community well-being.*

## THE ART OF GETTING BY: AD HOC ADAPTATIONS TO CLIMATE CHANGE IN COASTAL COMMUNITIES

### SUMMARY

Climate challenges have made life more difficult for coastal residents managing sea level rise, stronger and more frequent hurricanes, and increased rainfall flooding events. These changing climate conditions can influence resident decisions such as job choice, home location, and how they make material investments. This ethnographic and interview-based study assessed how coastal North Carolina residents are independently making climate change adaptations to their homes and property. Results show that homeowners recognize climate hazards and regularly make modifications, regardless of the adaptations enacted by institutions in their communities. Ad hoc adaptations can provide short-term protection from climate hazards, but have questionable long-term efficacy as sea levels rise and weather becomes more extreme.

### KEY FINDINGS

- Coastal residents are adapting to climate hazards on their own and have been doing so for decades. These adaptations are primarily related to homes and property and range from property elevation to installing pumps to remove water to using more water- and wind-tolerant building materials. Residents also let go of property that they no longer find viable to maintain, such as docks, salt inundated fields, or chronically flooded homes.



*A dock built to transverse a canal between cornfields is flooded due to high tides and heavy rainfall. ©Brianna Castro, 2020.*

- Traditional knowledge of managing floodwater, hurricanes, and insurance markets influence what adaptations homeowners rely on as climate conditions worsen. People manage climate change hazards by using techniques they know work for local environmental challenges. They adjust their homes to be more resilient and focus on the day-to-day management of hazards, rather than the risks of extreme disasters. Successful adaptation relies on deep local knowledge of ecological conditions, landscape, and social practices.

- As climate hazards outpace institutional response, they leave community members to adapt on their own and exacerbate existing inequalities among residents with different levels of resources. The financial and energetic burden of ad hoc adaptation is not boundless, and how much someone is able to adapt in place depends on how much time, money, and energy they have available.

## POLICY IMPLICATIONS

- North Carolina mitigation efforts are on the rise after Hurricane Florence, yet research is needed on how these efforts impact and align with household-level climate response. Interactions between state and local policies and household-level adaptations are crucial to understanding how communities navigate climate risk.
- Most coastal resilience policies are based on disaster recovery and follow disaster declarations from hurricanes and flood events. Disaster policy is not climate adaptation policy and the result at the household level is that homeowners must adapt to climate change with only occasional support from the disaster recovery funds that follow storms.
- The need to access disaster recovery dollars as well as employ ad hoc adaptation exacerbates inequality, as the former relies on people's knowledge of how to access the disaster recovery system and the latter requires local knowledge and resources for managing increasing hazards.

## STAKEHOLDERS

Stakeholders who may find this work interesting include state and municipal planners, resilience professionals, federal agencies, and mitigation planners. Housing experts and community advocates may also be interested in the justice and housing implications of this work coastal restoration programs.



*The Outer Banks Motel's individual mitigation measures included elevating HVAC and motel rooms and installing sandbag and dune barriers. ©Brianna Castro, 2020.*

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