

# **Local Government Resilience: Lessons from Post-Disaster Recovery in Three U.S. States**

**Ali Nejat<sup>1</sup>, Rodrigo Costa<sup>2</sup>, Sara Hamideh<sup>3</sup>, Ashley Ross<sup>4</sup>**

**1- Associate Professor, Department of Civil, Environmental, and Construction Engineering, Texas Tech University, Texas, USA - ali.nejat@ttu.edu**

**2- Assistant Professor, Department of Systems Design Engineering, University of Waterloo, Waterloo, Canada - rodrigo.costa@uwaterloo.ca**

**3- Associate Professor, The School of Marine and Atmospheric Sciences, Stony Brook University, New York, USA - sara.hamideh@stonybrook.edu**

**4- Associate Professor, Department of Marine and Coastal Environmental Science, Texas A&M University, Texas, USA - ashleydross@tamug.edu**

The governance of disaster recovery has become increasingly complex in an era characterized by institutional, economic, and climatic challenges. For some communities, compounding challenges represents a persistent condition shaped by overlapping environmental risks and hazards, economic uncertainties, and shifting social dynamics. The burden of these complex and compounding challenges falls heavily on subnational governments facing dual challenges: maintaining critical infrastructures that are vulnerable to disruption and implementing large recovery programs after their communities face major disruptions. In this context, the administration of disaster recovery funds, particularly housing assistance, offers a revealing lens into how local governance systems manage disruption in practice. While significant federal resources are allocated to states and local jurisdictions in the United States following disasters, the ability of these funds to translate into tangible recovery outcomes depends heavily on the organizational capacities and priorities of subnational actors, among many other factors. Rarely have researchers examined how local government capacities and priorities interact with the external dynamics of federal and state governments, as well as broader socioeconomic systems, to shape recovery trajectories.

This research examines the administration of disaster housing recovery funds in the US, specifically Community Development Block Grant – Disaster Recovery (CDBG-DR), across the three most populous and disaster-prone U.S. states: Texas, Florida, and California. Drawing on our work conducted through the HUD Center for Capacity-building for Resilient Housing (CECREH) and a CAREER project funded by the National Science Foundation, we analyze how these local and states agencies navigate the complex processes of estimating, obligating, disbursing, and expending recovery funds in the aftermath of Hurricanes Harvey (2017, Texas), Irma and Ian (2017 and 2022, Florida), and the 2017 Wildfires and Mudflows (California).

We employ a mixed-methods approach that combines qualitative and quantitative data sources and analyses to explore the role of government capacity in disaster recovery management. Data drawn from semi-structured interviews with administrators of housing assistance programs (i.e., state agency officials, program managers, consultants, and local grantees). Interviews, focused on perceived challenges, decision-making logic, and adaptive strategies in administering CDBG-DR funds, are analyzed for emergent themes related to government capacity. On the quantitative side, we systematically analyzed financial trajectories of CDBG-DR funding allocations, obligations, disbursements, and expenditures, drawn from quarterly progress reports (QPRs) as well as State Action Plans (SAPs) and their amendments. For each case, we examined four key expenditure categories: housing reconstruction and rehabilitation, new housing construction, program administration costs, and reconstruction of public facilities over a multi-year recovery horizon. This analytical approach reveals patterns and cases of fund redirection and shifts in priorities, delays, and mismatches between obligated and expended amounts, as well as effective and innovative use of flexible funds thereby offering insights into the underlying capacity of subnational actors in disaster recovery. The mixed method analysis highlights the ways in which organizational capacity both enables and constrains recovery, producing distinct patterns within and across states.

Our findings underscore substantial variation across states in how obligated funds were managed, reflecting both differences in organizational capacity and broader governance approaches. In California, housing reconstruction funds expenditures illustrate the challenges of aligning obligation trajectories with expenditure capacity. Midway through the multi-year recovery period, obligated funds for housing reconstruction rose sharply, suggesting ambitious programmatic commitments. However, by the end of the period, expenditures fell significantly short, amounting to only about one-third of the obligated total. Specifically, the single-family housing reconstruction program funded by CDBG-DR was significantly undersubscribed, a pattern observed after other disasters as well. A critical factor was the lengthy and burdensome application process, which caused many homeowners and tenants to forego assistance in favor of handling repairs independently. The California Department of Housing and Community Development's (HCD) single-family program was delayed for years, with grant applications for survivors of the 2017 wildfires and mudflows not being released until early 2020. This outcome revealed a significant mismatch between the program's design and the urgent, "turbulent conditions" of household-level recovery.

In contrast, Florida demonstrated a more incremental, stepwise approach. Obligated housing reconstruction funds began at relatively high levels and increased gradually over the multi-year recovery period. Importantly, expenditure closely tracks obligations, converging by the end of the period. While obligated reconstruction funds increased over time and expenditure eventually tracked with obligations, this was not a seamless process. The state was forced to amend its action plan repeatedly, reallocating funds due to budget shortfalls and rising construction costs. Despite efforts, the recovery was hampered by significant delays, administrative burdens for homeowners, and low program completion rates for years after the storm.

Texas exhibited yet another trajectory. Following Hurricane Harvey, Texas took a rapid approach to its CDBG-DR housing recovery, with a large sum of funds obligated soon after the disaster to address urgent housing needs. The state maintained a high level of funding over the subsequent five years, and expenditure ultimately converged with the total allocated funds. This sustained commitment highlights the state's capacity to manage long-term recovery, yet the process was not without hurdles. While the funding was sustained, administrative and procedural delays, including issues with the managing entity (Texas General Land Office), affected the speed of program delivery, causing frustration and years of waiting for many residents to receive assistance. The state's approach demonstrates the benefits of a decisive, large-scale funding response for recovery stability but also underscores the risks of a rigid funding structure that may limit adaptability when local conditions and individual household needs evolve over a prolonged period.

Taken together, these findings highlight that delays and challenges in disaster recovery are not only a function of external crises but also of internal administrative capacity and accurate knowledge of community needs. The trajectories observed across California, Florida, and Texas demonstrate that even when federal funds are made available at scale, their effectiveness depends on the ability of subnational actors to align obligations with realistic implementation pathways. California's case in particular illustrates that ambitious obligations can be hampered by delayed implementation and generate significant gaps, leaving resources underutilized and communities underserved. Florida's case demonstrates the importance of incremental, flexible alignment between obligations and capacity, while Texas highlights the value of consistency but also the

limits of rigidity. Understanding these dynamics is critical for designing governance strategies that are both adaptive and equitable.

By framing disaster recovery governance through the lens of compounding challenges and capacity, this study contributes to advancing both theory and practice. For policymakers, the findings underscore the importance of coupling financial allocations with investments in organizational capacity and inter-organization collaboration to ensure that obligated funds can be effectively expended. For practitioners, they suggest the value of embedding flexibility in funding mechanisms, so that resources can be adjusted to meet evolving community needs and administrative realities. For researchers, the comparative lens highlights how different governance logics—rapid stabilization, incremental alignment, or ambitious commitments—produce divergent outcomes under compounding challenges and uncertain conditions.

Ultimately, our analysis shows that disaster recovery is not simply about the size of the allocation but about the capacity to convert commitments into results. Recognizing compounding challenges as a persistent governance condition, rather than a temporary disruption, shifts the focus toward designing recovery programs that are flexible, capacity-sensitive, and adaptive. Such approaches are essential not only for addressing immediate crises but also for building the long-term resilience of communities that will increasingly face compounding challenges in the years ahead.