SimCenter Community Roundtable
"Post-Disaster Housing and Household Recovery"
January 22, 2025

This SimCenter Community Roundtable meeting was organized by the **Socio-Economic Impact and Recovery Group**. Post-disaster housing and household recovery directly impact the livelihoods of individuals and communities. The experience of recovery is heavily influenced by factors beyond damage to the built environment, such as household displacement, access to resources, and equity issues. These are particularly affecting low-income, minority residents, and renters, and there is substantial added complexity through the interdependencies between housing and other sectors, such as jobs and businesses. The existing affordable housing crisis significantly complicates disaster recovery efforts. Therefore, understanding and improving housing and household recovery is essential for community resilience.

The meeting brought together social science researchers, modelers, and practitioners interested in post-disaster housing and household recovery. The presentations and discussions provided an overview of recent advances, challenges and opportunities in the area of housing and household recovery at various scales.

Host: Rachel Davidson, University of Delaware

The roundtable started with presentations from four panelists, followed by an open discussion among all participants.

Presentation Topics and Key Ideas

1. **Demarcus Foster - The reality of post-disaster recovery for vulnerable communities**
   Demarcus Foster, representing Civic Heart Community Services, an organization active in Houston, Texas, shared insights from his six years working there, focusing on providing resources, education, and information to help people empower themselves, particularly regarding recovery from natural disasters. He specifically works in the Northern Third Ward in Houston, a neighborhood facing hardships such as gentrification and frequent disasters including major floods, hurricanes, and ice/winter storms. Civic Heart's focus is on low-income, minority residents, mostly renters, who often lack awareness of available resources. Slow recovery aid, difficulties with housing affordability, equity issues (where higher-income individuals sometimes seem to benefit more or faster), cultural barriers (such as language or discomfort seeking aid due to citizenship status), and the increasing impacts of climate change were mentioned as significant challenges.

2. **Andrew Rumbach - Potential impacts of policy changes on federal housing and recovery programs**
   Andrew Rumbach, a Senior Fellow at the Urban Institute, a large non-partisan think tank in Washington D.C., provided an overview of the federal policy landscape for housing and housing recovery, based on his experience serving as a conduit between policymakers and researchers. He discussed the perspective of Project 2025, a conservative vision that views reforming disaster response as less central than other government areas, emphasizing resilience over climate and focusing on improving our ability to withstand events and recover quickly. The changes are expected to shift more responsibility to states and local governments, an idea that has also seen bipartisan support previously. Potential changes to NOAA, FEMA, HUD's CDBG-DR program, and SBA loans were discussed.

3. **Elaina Sutley - Critical challenges and ethical considerations in post-disaster household recovery**
   Elaina Sutley, an Associate Professor of Structural Engineering at the University of Kansas, presented challenges and opportunities from her perspective working across engineering and social sciences. She highlighted that understanding why people do not return post-disaster is crucial, yet researchers often track housing units rather than the people themselves. Managed retreat and community-led relocation raise difficult

questions about when relocating is acceptable. People with more resources move by choice, while others move out of necessity or force. The relationship between mitigation and recovery needs more longitudinal research to connect specific mitigation actions to long-term recovery outcomes and understand their effectiveness, especially regarding equity. Implementing changes in practice, including building codes and policies, to enhance resilience and equity is challenging. The insurance market withdrawal adds a new level of complexity and uncertainty because insurance historically has been a key risk transfer mechanism for households. Finally, she emphasized the critical need to connections between housing and other sectors such as businesses for a holistic understanding resilience.

4. **Ali Nejat - Computational modeling and data challenges in post-disaster housing recovery**
   Ali Nejat, Director of a HUD Center of Excellence in Climate Resilient & Equitable Housing and Associate Professor of Construction Engineering at Texas Tech University, discussed components of disaster recovery research and the work of the HUD Center. His research utilizes diverse data sources like tax records, surveys, and census data, along with quantitative methodologies including simulation modeling, geospatial analysis, and regression. He reviewed the critical parameters influencing recovery decisions and discussed key challenges, including data limitations and data sharing issues. These constraints impede accurate assessment of community unmet needs and the timing of financial aid.

Discussion Highlights

- **Challenges in Tracking Post-Disaster Household Movement and Data Sharing**
  - Tracking households, as opposed to just housing units, is a vital yet challenging question for researchers, particularly in understanding why people do not return to their pre-disaster homes and documenting disparate recovery experiences
  - A significant barrier is the failure of federal agencies, such as FEMA, to appropriately share data with researchers, which hinders the ability to answer fundamental questions about displacement and household outcomes.
  - Key inputs critically lacking for sophisticated simulation modeling include data on behavioral parameters, inventory for various housing types (like manufactured housing), insurance, economic resources, and workforce resources.
  - Methods for tracking discussed included small, time-demanding studies, building trust with participants, surveys, and utilizing secondary data such as USPS change-of-address information or cell phone pings.

- **Addressing the Speed and Equity of Recovery Aid Delivery**
  - Slow recovery aid, particularly from government and financial sources, was identified as a major challenge, requiring affected households to navigate complex processes that can be discouraging and demand resources like internet access which may not be available.
  - While there are incremental improvements in FEMA operations (e.g., faster cash assistance programs, streamlined application processes), transformative policy reform is needed to significantly speed up aid delivery.
  - Inconsistent data capture and data sharing issues among various federal entities (like FEMA, SBA, and HUD CDBG-DR) can impede the accurate assessment of community unmet needs and affect the timing of financial aid distribution.
  - Equity issues are prominent, with observations that higher-income individuals sometimes appear to benefit more or faster, underscoring the need for advocacy on behalf of vulnerable populations.

- **Disasters Exacerbate the Existing Affordable Housing Crisis**
  - Renters face particular challenges, including landlords potentially not making appropriate repairs (e.g., painting over mold) and significant difficulty finding alternative housing after displacement due to limited income and the high cost of the housing market.

- The relationship between disaster recovery and housing affordability is complex, involving confounding factors such as changes in income and displacement after events, making analyses with simple, idealized models insufficient.
- Housing market dynamics are extremely segmented and regional, implying that solutions and disaster impacts on affordability will look very different depending on the specific location.
- The concept of the "true cost of housing" was raised, suggesting the need to account for the long-term financial implications of building in hazardous areas when discussing affordability and resilience.

- **Beyond Damage: The Role of Behavioral and Socioeconomic Factors in Recovery**
  - Decisions about recovery, such as whether to rebuild in place or relocate, are not solely driven by the extent of physical damage but are significantly influenced by behavioral and socioeconomic factors, including social capital, location attachment, and past traumatic experiences.
  - Understanding these complex behavioral patterns and decision-making processes is critical for developing more realistic and accurate simulation models of post-disaster recovery.
  - A convergence approach that incorporates both qualitative and quantitative data and perspectives is essential for a comprehensive understanding of disaster recovery and community needs.

More Information

Additional SimCenter Community Roundtable meetings can be found at https://simcenter.designsafe-ci.org/collaborate/scr/.