

Round Table Discussion from CIRCA Research Symposium 2024

Economy, Workforce and Planning Perspectives and Climate Communication and Policy

CIRCA Moderators: John Truscinski & Lonanne Cooley

The combined discussion on Economy, Workforce and Planning Perspectives and Climate Communication and Policy talked about the importance of community relationships, using established community institutions to convey information and build trust, and how important it is to establish these communication corridors prior to emergency situations. This can be challenging where trust in government is lacking and in marginalized and vulnerable populations harmed by economic forces that leave them little capacity for addressing non-acute issues. The concept of Resilience Hubs—as physical locations where trust-verified information is transmitted was considered.

The table also discussed how to work within existing systems to develop new models to value ecological and environmental benefits and build apprenticeship programs for green job workforce development in a just transition while focusing on resilience opportunity areas using qualitative and quantitative indicators and mechanisms to assess efficacy of programs.

Climate Justice & Equity, AND Public Health & Emergency Management

CIRCA Moderators: Mary Buchanan & Nicole Govert

In the round table discussion on Climate Justice and Equity as well as Public Health and Emergency Management, several overarching concepts came to the forefront. Connecticut was spotlighted as a microcosm of nationwide concerns due to notable disparities within a compact geographical area. Participants noted a lack of coordinated initiatives to safeguard individuals from flooding, observing a reliance on individual homeowners, home elevations, and insurance claims instead. Criticism was directed at this approach for essentially postponing rather than resolving problems.

Another key observation was the lack of trust between emergency responder services and community residents. One participant shared insights from her previous ethnographic research in four CT counties, which revealed a need for information from reliable in-person sources, overcoming language barriers, and using media channels that people actually check. Additionally, the surveys identified a lack of diversity among emergency management directors (EMDs) as a notable concern. The reliance on volunteers for emergency response, particularly in rural areas, also raised concerns. This intersects with the lack of diversity among EMDs, who often wear many hats with insufficient support. The discussion emphasized the need for increased funding and support for emergency management and response, discouraging heavy reliance on volunteers.

Gendered aspects of climate change labor sparked interest, focusing on the roles of librarians (mostly women) versus EMDs (mostly men). Gender disparities in climate adaptation labor were discussed, exploring how these jobs contribute to community resilience.



Specific challenges discussed included the affordability of flood insurance, changes in FEMA's assessment of flood vulnerabilities, and hazards of combined-sewer overflow systems (CSO). There was interest in investigating the overlap between CSO sites and where EJ communities are located across the Northeast, although challenges in obtaining accurate information were acknowledged. Additional challenges identified include shortcomings in the DEMHS Disaster Framework's planning assumptions, dropped pieces of information in FEMA data records, a poor record within Connecticut for disclosing past flood incidents during house sales, and a general lack of a two-way information flow between residents and planning/response/data teams.

Finally, historically affluent towns were highlighted as facing increasing needs among certain populations and growing climate risks, despite being unprepared for these changing conditions. For instance, Essex, considered affluent, has 30% of its population falling into the Asset Limited, Income Constrained, Employed (ALICE) category.

Decarbonization and Energy and Biodiversity, Ecosystem, and Conservation

CIRCA Moderators: Kirt Mayland & Libbie Duskin

The discussed efforts in Connecticut that have been made toward decarbonization include things like encouraging the use of solar farms and electric vehicles and research into methods of reducing CO2 output from livestock. While these methods may be worthwhile, some of these efforts do not take into consideration the impacts developments may have on ecosystems, conservation efforts, or human impact. An example of this would be the development of solar farms in a place like Connecticut, where the energy output is not as great as it is in comparison to other states. Solar farms are often built in areas that require the clear-cutting of forests, and this decision may miss the connection of this development's effect on the ecosystem/biodiversity of the area. Incentives to create solar energy outweigh the conservation incentives. The table also discussed whether or not "green" hydrogen will be commercially viable in the coming decades and the need for durational batteries. Our decision-making methods do not always consider all impacts in the cost/benefit analysis. Spatial research could help fill in the gaps in the data to better inform decision-making processes.

A few group members discussed how livestock can affect the soil and water of an area in addition to greenhouse gas emissions. Anaerobic digesters are becoming more useful in offsetting emissions and treating manure. These digesters are not widely available in Connecticut, which makes transport of the material to these facilities costly.

Resilience Adaptation and Engineering, AND Inland and Coastal Flooding

CIRCA Moderators: Yaprak Onat & Marc de Vos

A diverse set of issues emerged during this discussion which might be broadly classified into four themes. The discussion unfolded in the context of unanimous acknowledgment of the threats that climate change-induced hazards pose to communities in Connecticut and the need for continued work toward enhanced resilience.

Linkages between different research groups and planners



There is scope to share outcomes more frequently and widely among a targeted audience of research groups. Targeted groups could be identified by defining the inputs, outputs and feedbacks of the systems being studied by particular groups. For example, researchers involved in assessing vulnerabilities of biological systems such as eelgrass beds in Connecticut are often downstream users of geophysical information. The effective sharing of information by researchers who are synthesizing likely impacts based on climate projections could augment such work. It may also be effective to establish linkages beyond academic groups. For example, materials research into the lifecycle of pavement as a function of temperature may provide feedback to planners' motivation for the enhancement of tree canopy coverage (increased shade) in certain Connecticut communities.

Data: best practice

A need was identified to ensure that interdisciplinary and applied researchers utilize datasets that are both up to date and fit for purpose. The use of historical weather data in infrastructure design, for example, may no longer be appropriate as weather-climate systems change. Where projections are used, they should be the latest and applied appropriately, given their spatial and temporal resolution. Frequent updating of data repositories and metadata can assist. Another potential solution is a curated directory that describes available datasets and to which users could refer to select the most appropriate dataset for their needs. Further, there is a need to a) harmonize and/or b) acknowledge and understand the differences between academic and commercial models and data, insofar as they affect planning outcomes.

Communication of uncertainty

Among policymakers and the public, the envelope of uncertainty associated with projections of coastal risk is not well understood. There is scope for enhanced engagement in this regard. Moreover, researchers and planners should tailor their communication of possible outcomes and uncertainties to be less technical and more intuitive. For example, rather than communicating probabilities and quantities of sea level rise (e.g., 75 % probability of 20 inches by 2050), possible scenarios and their impacts could be explained: "If our worst-case SLR scenario unfolds, X houses in this area will flood, displacing Y number of people." This is better understood downstream and allows the impact of a geophysical driver to be decoupled from its magnitude. Decoupling is important, especially where increased hazard magnitude (sea level, heat, precipitation) does not necessarily result in increased impact (and vice versa), which is useful insight for optimal resource allocation.

Resources

Participants were prompted for their wish lists regarding enhancing their research. Physical climate researchers listed computational resources to enable the downscaling of climate projections to local scales. Among planners, data, computational and human resources (sensors, computing power, people, and time) were listed to enable fine-scale landscape modeling.

