Enabling homeowners to adapt to flooding: The case of Rockaway, New York

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The objective and the setting

Improve urban homeowners’ capacity to adapt to flooding.

Rockaway:
• Densely populated
• Diverse
• Historically low investment

New York City Flood Hazard Mapper https://www1.nyc.gov/site/planning/data-maps/flood-hazard-mapper.page
The project

• Does co-producing knowledge about flood risks and adaptation options influence behavior, whose behavior, how and why?
• Co-produce knowledge with civic and homeowner associations.
• Engaged through a trusted partner – RISE.
• Series of three workshops: flood risk and adaptation options.
• Focus on what individual homeowner can do.
• Place and person-specific information.
How much flooding can Kate and Ben expect?

Flood elevation now
- 1% annual chance (BFE): 10 ft
- 10% annual chance: 7 ft
- Annual flood: no risk

Ground: 6 ft
Lowest floor: 0.5 ft
First floor: 7 ft

Flood elevation in 2050
- 1% annual chance: 11 ft
- 10% annual chance: 8 ft
- Annual flood: about 3 inches above ground
What will it cost Kate and Ben to recover from flooding if they don’t do anything to reduce damages?

- Over the next 15 years: $450,000 on average
  - Range: $120,000 – $950,000
- Over the next 30 years: $1,700,000 on average
  - Range: $570,000 - $2,700,000
Should Kate and Ben fill the basement?

Benefit 30 yrs: $1,631,000 ($568,000-$2,460,000)
Benefit 15 yrs: $434,000 ($120,000-$840,000)
Cost: $8,500 - $30,000
Effect on insurance premium: Small because lowest floor remains below BFE
Considerations:
- May be able to replace lost space
- Lowest floor still below BFE
- May be a step on way to abandoning first floor
Remaining recovery costs 30 yrs: $69,000 ($2,000-$240,000)
Evaluation

• Purpose
  o Develop effective approach to building adaptation capacity
    ➢ Improve planning, decision making, and adaptation outcomes
  o Justify funding

• Evaluation question: Who benefits from the approach, who experienced negative effects, under what conditions, how, and why?

• Evaluate what?
  o Process
  o Outcomes
Program theory

• Lack of information is a barrier to planning, decision making, and action.
• Useful information requires co-production.
  o How much, at what point, by whom?
• Useful information is specific to decisions and actions that homeowners can make and take.
• How use the information, and benefits, depend on resources, organizational capacity, networks, geography, other factors.
  • Effect on individual outcomes: capacity, decisions, actions, resilience
  • Effect on collective outcomes
Methodology

• Mixed methods

• Contribution: Qualitative methods based on transcripts of workshops and meetings.

• Attribution: Quantitative difference-in-difference approach.
  o Baseline and follow-up survey data on outcomes among participating and non-participating groups.
Preliminary insights

• General information about flood risk → lack of agency.
  o City government responsible for flood planning and protection.
  o About 80% not aware of online information specifically for residents.

• Considering individual risks → sense of urgency and personal responsibility.

• Role of online information.

• Simple is not always good - empowering to think in terms of a menu of strategies.

• Considering individual risks led to interest in a collective planning process.
  o More so among the less well-off.

• Began to raise the question of relocation.
What happens next?

• Follow up survey completes this project.
• Participants agreed to meet, disseminate, engage elected officials.
• Organizing to plan and act is challenging.
  o Uncertainty and unknowns, no longer about the risks but about
    ➢ Public policy and investment
    ➢ What will other residents do?
  o Inadequate resources, even for middle income residents
  o Equity implications of organizing across diverse, divided communities

• Evaluation question: Does the information and motivation to act persist and disseminate and how?
Thank you

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