

Developing Metrics and Scoring Procedures to Support Mitigation Grant Program Decisionmaking



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The Federal Emergency Management Agency commissioned development of metrics that can inform decisionmaking for awarding predisaster mitigation grants. The authors established three lines of effort (LoEs) for analysis: indirect benefits, applicant institutional capability, and community resilience. Each LoE produced a metric or framework that could support grant decisionmaking and program performance evaluation.

RESEARCH QUESTIONS

- What are the best ways to measure how a mitigation project averts economic losses across an entire community?
- What are the best ways to measure applicant capability to propose high-quality projects and execute them on time and on budget?
- What are the best ways to assess measures of community resilience—the ability of a community to prepare for, adapt to, and recover from disruption?

KEY FINDINGS

The indirect benefits line found that input-output (I-O) and computable general equilibrium (CGE) are the two most widely accepted modeling strategies for estimating the economic benefits of hazard mitigation

- Although each type of model contains certain advantages and disadvantages, I-O models are the most practical near-term option for estimating the economic benefits of hazard mitigation.
- The indirect benefits line provides detailed instructions for how to model economic benefits using an I-O approach.

The AIC line developed a checklist for assessing the ability of applicants to propose or execute mitigation projects

- The most important internal factors for high-performing applicants were an appropriately trained and skilled workforce, prior experience, and access to management and technical capabilities.
- The specific evaluation criteria include general and key staff turnover, staff skill/expertise and prior experience with predisaster mitigation projects and grants, management/administration capabilities, and access to technical expertise to propose predisaster mitigation projects.
- External factors outside an applicant's control—such as disaster activity and weather delays—also influence project performance.

The community resilience line developed an assessment framework for evaluating community resilience measures based on BRIC's legal requirements, discussions with leadership, and standard best practices

- Measures based on actions that communities can take may be more useful to BRIC than measures based on difficult-to-change census population characteristics.
- Vulnerability measures based on difficult-to-change census population characteristics may be better suited to the measurement of equity gaps in program outcomes.
- Building codes are heavily emphasized in the legal framework guiding disaster recovery and measure an important aspect of resilience. However, they are often missing from resilience measures.

RECOMMENDATIONS

- Develop a strategy for addressing known disaster relief fund cost drivers.
- In the near term, use a tailored I-O model to measure communitywide indirect benefits of mitigation projects.
- Integrate the indirect benefits model into Hazus and automate as much as possible.
- Decide whether a CGE model or an I-O model best suits the long-term needs of the BRIC program.
- Evaluate applicant capability to propose or execute high-quality mitigation projects and develop strategies for supporting lower-capability applicants.
- In evaluating applicant capability, focus on staff retention, staff skill and experience, management capability, and technical capability.
- Periodically assess community resilience measures and encourage usage at FEMA of measures that performed well on the assessment.
- In evaluating community resilience, focus on resilience, statutory compliance, scientific validation, and practicality.
- Use action-based community resilience metrics to evaluate performance.
- Consider population-based community resilience metrics to evaluate equity gaps.
- Consider building code adoption and enforcement metrics to improve statutory compliance if these are not already part of the community resilience metric chosen.