

Evidence Project Portal

The U.S. Army Corps of Engineers, National Science Foundation, and Environmental Protection Agency seek a research partner. Details below. If interested, please plan to attend a virtual researcher interest meeting on **December 9, 2024 from 2:30-3:30 EST** to learn more about the project opportunity.

Email Evidence@omb.eop.gov to RSVP and receive a calendar invitation for the virtual meeting. Please include your resume, if available.

How can standardizing resilience metrics improve cross-agency disaster response and recovery and optimize the allocation of government resources to ensure cost-effective and equitable outcomes?



Agencies: U.S. Army Corps of Engineers, National Science Foundation, and Environmental Protection Agency

Topics: Resilience; Disaster Preparedness; Risk Quantification; Government Efficiency

Summary:

This project aims to identify and disseminate resilience metrics that can be applied across multiple federal agencies to improve coordinated disaster preparedness, response, and recovery. The increasing frequency and severity of natural and human-made disasters require a consistent and evidence-based approach to measuring resilience. Current methods of resilience quantification are fragmented across agencies, creating challenges in coordinating responses and evaluating the effectiveness of resilience-building initiatives.

Harmonizing existing resilience metrics and methodologies¹ is intended to allow for coherent assessment and comparison across different agencies and domains, including infrastructure, social systems, and ecosystems. By standardizing these metrics, the project will enhance the ability of federal agencies to collaboratively address complex, multidimensional threats, improving both the effectiveness and efficiency of disaster response and resilience-building efforts.

The selected project team will convene and facilitate a workshop of leading scientists, engineers, and policymakers with expertise in measuring resilience across a variety of settings. This workshop will identify gaps in current resilience measurement practices and develop a unified framework for resilience quantification. Informed by the workshop, the project team will compile a comprehensive report, outlining actionable recommendations for implementing standardized resilience metrics across federal agencies. The resulting standardized framework will provide federal agencies with the tools needed to build a shared evidence base to support informed decisions and improve resilience in the face of evolving threats.

¹For review, see Linkov, I., & Trump, B. D. (Eds.). (2019). *The science and practice of resilience*. Springer. <https://doi.org/10.1007/978-3-030-04565-4> ,

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This initiative aligns with key policy priorities, such as climate adaptation, disaster preparedness, and national security, and supports the national resilience strategy (e.g., [FEMA National Resilience Guidance: A Collaborative Approach to Building Resilience](#)).

This work will address 5 key questions:

1. What standardized metrics can be developed and applied across federal agencies to effectively quantify resilience at different levels (e.g., community, organizational, and national) and across various domains (e.g., infrastructure, social systems, and ecosystems)?
2. How can existing resilience quantification methods be harmonized to create a coherent framework that allows for consistent assessment and comparison of resilience across different agencies and contexts?
3. What are the critical gaps in current resilience measurement practices that hinder effective cross-agency collaboration and disaster response, and how can these gaps be addressed through standardized metrics and methodologies?
4. How can the integration of spatial and temporal factors into resilience metrics enhance the accuracy and relevance of resilience assessments in federal agencies' mission continuity planning?
5. How are federal agencies effectively implementing standardized resilience metrics, and how can these practices be disseminated and adopted across the broader resilience community?

Anticipated deliverables:

- Workshop on reliance metrics standardization: A multi-agency event with external researchers and experts to identify and address gaps in resilience measurement and harmonization efforts across federal agencies.
- Comprehensive report with actionable recommendations: A detailed report providing standardized resilience metrics, methodologies, and evidence-based recommendations for cross-agency implementation.
- Standardized resilience framework: A unified framework for consistent assessment and comparison of resilience metrics across federal agencies, supporting improved disaster preparedness and response.

Planned use of results:

Results from this project will support informed decision-making and coordinated action across federal agencies by developing a standardized resilience quantification framework, enabling agencies to assess, strengthen, and prioritize resilience measures effectively in response to national or local challenges. This framework will guide decisions related to disaster preparedness, response, and recovery, ensuring a more coordinated and effective approach to managing complex threats. Additionally, the findings will influence future resilience strategies and continuous improvements in federal disaster management practices.

Funding:

\$75,000 for one year

Data:

The selected project team may gain access to data from the U.S. Army Corps of Engineers and other government agencies, including existing resilience metrics, assessment tools, and case studies from previous disaster response and recovery efforts. These datasets include both qualitative and quantitative information, relevant to various resilience domains such as infrastructure, social systems, and ecosystems. To ensure secure and compliant access to this data, adherence to data sharing agreements that specify conditions for data use, confidentiality, and data protection will be required.

Other Benefits to Researchers:

Experts will gain valuable insights into government policy by engaging with federal personnel, including scientists and policymakers. They will have opportunities to collaborate with key stakeholders across multiple federal agencies, fostering relationships for future projects. The project team will also have the opportunity to inform the methodological approach that ultimately informs federal resilience strategies and influence national disaster preparedness policies.

Expertise needed:

Knowledge of evaluation research methods/design (e.g., mixed methods, experimental/quasi-experimental design); science of science, or metascience (defined as the use of scientific methodology to study science itself). Experience organizing and facilitating a workshop, and summarizing or synthesizing results in a user-friendly and policy relevant way is preferred.

Key dates:

- Facilitate multi-agency workshop on resilience metrics by February 2025
- Submit final report with actionable recommendations for implementing standardized resilience metrics by September 2025

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