



Case Study: Using Existing Indicator Tracking Systems for Adaptation

New Jersey Assesses Progress on Preparedness after Hurricane Sandy

Overview

Municipalities around the country already voluntarily implement FEMA's Community Rating System (CRS) to increase their flood preparedness and decrease their residents' insurance premiums.

The Jacques Cousteau National Estuarine Research Reserve (JC NERR) in New Jersey—together with federal, state, local, and project partners—explored whether this accepted incentive-based system could also track increases in resilience and adaptation preparedness and how it would need to be adjusted to do so.

Together, partners discovered both benefits and limitations to building on already existing systems such as the CRS.

They also gleaned valuable insights on the difficulty of linking adaptation actions to desirable outcomes (such as an increase in preparedness on the ground).



Photo courtesy of JC NERR, Rutgers University.

Route 30 entering Atlantic City, NJ, during a King Tide event, illustrating the urgency to advance adaptation planning.



This case study was created to serve as a reference for individuals interested in indicators and metrics to help communities define and track progress on their climate adaptation goals. Additional background and resources are available on the website: www.ResilienceMetrics.org.

This website was developed in partnership with the National Estuarine Research Reserve System with funding from NOAA.

Background

The National Flood Insurance Program's (NFIP) Community Rating System (CRS) is an important national program that exists to improve floodplain management. The CRS is a voluntary incentive-based program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. The program has three goals:

1. Reduce flood damage to insurable property.
2. Strengthen and support the insurance aspects of the NFIP, and
3. Encourage a comprehensive approach to floodplain management.

Facilitation Tools and Job aids

- Facilitation Tool: Break-out Group Discussion on Adaptation & Outcomes
- Facilitation Tool: Panel Discussion on Monitoring Indicators & Metrics
- Facilitation Tool: Roving Flip Charts to Brainstorm Indicators and Effective Tracking Systems
- Job Aid: What Makes a Good Indicator?

CRS Resources and Links

- <https://www.fema.gov/national-flood-insurance-program-community-rating-system>
- <https://crsresources.org/>
- <https://www.fema.gov/media-library-data/20130726-1557-20490-7308/42appendixg.pdf>
- Appendix F: Community rating System

Other Existing Resilience Indices

In addition to the CRS, there are a number of resilience indices that serve as “self-assessment” processes for municipalities to “rate” their resilience. While none of these programs currently have a direct financial incentive, a number of them have a process that is related and overlaps with CRS approved actions. Some examples include:

- The Coastal Resilience Index - Gulf of Mexico : http://masgc.org/assets/uploads/publications/662/coastal_community_resilience_index.pdf
- Getting to Resilience - New Jersey : <http://www.prepareyourcommunitynj.org>
- CoastSmart Scorecard - Maryland: https://dnr.maryland.gov/ccs/coastsmart/Pages/cs_Scorecard.aspx
- Resilient Communities Scorecard - Vermont: <https://vnrc.org/resources/community-planning-toolbox/tools/vermont-smart-growth-score-card/>

Contact

- **Lisa Auermuller**, Jacques Cousteau National Estuarine Research Reserve, auernull@marine.rutgers.edu

As communities take additional steps to enhance their flood mitigation and disaster preparedness, flood insurance premium rates are discounted to reflect the reduced flood risk.

Achieving lower flood insurance for insured property owners can be an enormous motivation for municipalities to start thinking about increasing resilience. Due to the financial incentives for participation, municipalities are politically and financially committed to providing resources for tracking and staffing their local program with a CRS Coordinator.

Municipal planning actions, such as increasing freeboard, can be a win-win: more freeboard adds a safety factor for residents, and their insurance premiums decrease. Qualifying actions are audited every year by ISO representatives and communities are fully recertified on a 5-year cycle. The program is flexible: for example, partial credit may be awarded if a given activity is implemented in some, but not all, areas of an at-risk community.

Communities can earn additional insurance-rate discounts through actions specifically aimed at adapting to the projected impacts of climate change, growing flood risks, and higher sea level. However, the NFIP does not require adaptation action, nor do the flood maps take into account forward-looking flood risk (i.e., how risk may change as a result of climate change).

In 2012, Superstorm Sandy caused major damage along the New Jersey coast, leading many communities to undertake efforts to assess their resilience in light of current and future floods and sea-level rise. Through its Coastal Training Program, the Jacques Cousteau Reserve in Tuckerton, New Jersey—a large estuarine reserve on a densely developed coastline—has supported communities in their rebuilding efforts—not only to build back after the storm, but to build back better.

But how would communities know whether they are indeed better prepared for the next Sandy? One potential approach was to use existing tracking systems (like the CRS) to help communities track the outcomes of their resilience-building efforts. The JC NERR convened a workshop with project partners, state and local stakeholders to gauge the viability of this approach.

Outcomes

The JC NERR hosted the Successful Adaptation Indicators and Metrics (SAIM) workshop in June 2016. The event was driven by the question of whether local communities were better prepared now than they were before Sandy.

At the workshop, participants from a variety of sectors (academia, non-profit, state, federal, local, and county government agencies) explored the question of developing and tracking resilience/adaptation indicators through the lens of post-Sandy planning. Part of the discussion focused on existing “resilience” tracking programs—such as the CRS—that may have the potential to serve as, or could be a starting point for, local-level tracking of resilience-building activities and their outcomes.

Municipal representatives noted that more and more communities look to the CRS as a way to offset insurance rates. However, as communities obtain better ratings, these

savings become harder to achieve because the highest-value activities (preserving open space; implementing higher regulatory standards, such as building codes or setbacks; relocating properties out of the floodplain) tend to be most difficult to realize.

Municipalities that wish to sustain their CRS rating also need to keep updating or renewing their efforts, or they risk increasing flood insurance premiums for residents. Fortunately, CRS provides a “portfolio of resilience actions”—ranging from outreach projects to green infrastructure—that communities can choose from to achieve better CRS ratings.

Workshop participants discussed the pros and cons of utilizing an existing system like the CRS for tracking adaptation indicators.

Participants agreed this topic is ripe for further discussion, recognizing that many municipalities (especially small ones) would need dedicated staff or hands-on technical assistance for a climate adaptation tracking program to be adopted in practice.

Regardless of which tracking system is used, communities need to learn that no “success” is final, but that becoming and staying resilient is an ever-changing challenge. Success could make people complacent, but a continually changing environment doesn’t allow for such complacency, so metrics need to be sensitive to change on the ground (e.g., regularly updating baselines).

Moreover, tracking systems for adaptation need to address all relevant climate hazards and all dimensions of success that are important to a community. Thus, even if CRS were used to track progress on adaptation, its narrow focus on flooding does not reflect things like social cohesion, community well-being, or sustaining cultural practices. Such indicators should be carefully developed, prioritized, and selected with affected stakeholders and decision-makers.

As to the opening question—whether communities along the Jersey shore are more resilient now than before Sandy—workshop participants realized how difficult to answer that question actually is and that single actions rarely cause linear increases in safety or preparedness. Yet an event like Sandy provides an opportunity to demonstrate tangibly to residents the effectiveness of hazard mitigation/adaptation activities such as wetland restoration, as they can see for themselves how much less damage properties inland of them sustained. Thus, the time after the most immediate disaster response is over is a precious window of opportunity to engage communities in awareness raising, resilience building and adaptation planning.