



## Methodology Guide:

# SURVEYS, INTERVIEWS, AND LITERATURE REVIEWS

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## Overview

When using an economic methodology is not feasible, results from surveys, interviews, and literature reviews or related analyses can provide a compelling alternative. These approaches can be used as an effective way to promote or justify a project by illustrating generally how a coastal project, such as natural infrastructure, could generate benefits. There are many ways to conduct a survey, interview, or literature review, as well as variations such as focus groups or meta-analyses. While not economic in nature, these methods may leverage economic data in some way.

This guidance document provides the reader with information about 1) how to convey the general benefits of a proposed project through storytelling using surveys, interviews, and literature reviews; and 2) how to apply information gathered from surveys, interviews, and literature reviews to economic analyses.

## When to Consider

- If a proposed project's costs or benefits cannot be easily or feasibly estimated in dollar values, you will want to consider conducting surveys, interviews, or literature reviews. Data limitations or other constraints, such as lack of time, funding, or economic expertise, may prevent you from carrying out an economic analysis.
- If you do not have specific monetary values for a proposed project's environmental (co-) benefits, but you still want to tell a compelling story about the possible benefits a project might generate.
- If you want to gauge public perceptions, possible reactions, or expert opinions but do not necessarily need to monetize values (generate dollar figures) to make the strongest case for your project.
- If you have a good amount of funding and time, and a local economic expert to help. You may want to carry out surveys, interviews, or literature reviews as a preliminary gauge before commissioning an economic analysis, or to feed into another analysis. It is common to conduct interviews before generating a survey in order to identify the specific questions that will be most appropriate for your survey population.

## Important Results

- Information gathered from surveys, interviews, and literature reviews could contribute to a compelling story to describe the benefits that a project could generate. For example, you could create a narrative demonstrating how natural infrastructure could benefit the local community based on literature reviews of case studies that show how other communities used natural infrastructure.
- Numerical information from a qualitative analysis can provide important context in an economic analysis. For example, stating the number of people impacted or the acres protected by a project could be a result from a survey, interview, or literature review and be used to illustrate benefits as a result of a proposed project.
- A non-economic analysis via a survey could gather data on visitors' perceptions or anticipated visitation rates to an area if a beach is widened or a recreation area with marsh is restored. This questionnaire could provide general statistics about the anticipated rates of tourism behavior and motivations if a proposed restoration project were to be built.

## Strengths

- Compelling stories can resonate with many audiences. Even if you perform a thorough benefit-cost analysis, results from a survey, interview, literature review, qualitative analysis, or story that demonstrates the benefits of a project can be an effective way to promote or justify your project.
- Because surveys, interviews, and literature reviews do not require you to monetize benefits or costs, it can be much less resource intensive than a benefit-cost or cost-effectiveness analysis. This could save you time, money, and the need to hire an economist.

## Challenges

- Carrying out a survey, interview, or literature review does not help you determine definitively whether a project's benefits outweigh its costs. That said, it can provide compelling indications.
- Surveys, interviews, and literature reviews provide limited insight in an "apples-to-apples" comparison about how to best select between multiple project alternatives.

## Key Suggestions, Interpreting Results, and Potential Mistakes

- Soliciting help from a social scientist is recommended if carrying out a complex survey to collect information to estimate public support.
- An anecdotal story that outlines benefits can be powerful and sway an opinion in a way that may not be consistent with the magnitude to which a project provides a net benefit. Ensure that the survey, interview, literature review, or similar method you carry out makes clear that these are potential benefits and that the magnitude of them is unknown.

- Several sample qualitative analyses can be found in the Principles for Sustainable Insurance (PSI) Global Resilience Project’s 2014 report.<sup>1</sup> In particular, the report considers the impact of mangroves on cyclone risk reduction. Rather than calculating a specific benefit-cost ratio or cost-effectiveness measure, the report discusses the types of benefits one would expect and references relevant literature. For example, the authors note that “[s]tudies estimate that mangroves generate [in economic benefits] between USD 2000 to USD 9000 per hectare per year” and “[e]stimates for rebuilding mangrove forests range widely from USD 200 per hectare up to USD 216,000 per hectare.” However, they do not directly compare the benefits and costs in a benefit-cost analysis because they found “the information to be often inconsistent and difficult to compare, presenting a challenge to drawing meaningful insights on the effectiveness of each risk reduction measure.”
- Surveys, interviews, and literature reviews discussed here provide various ways to obtain information in the absence of carrying out an economic analysis. Other approaches include focus groups, meta-analysis, characterizing demographics, social network analysis, case studies, and many others. It is important to think carefully about which is best for your objective and available resources.

## Key Steps

- Identify in a general, categorical way, or list, all the expected benefits and costs so you can demonstrate the breadth of these trade-offs. See “Resources to Dive Deeper” for more help, data, and example, below.
- Develop a value chain to illustrate and make clear how the project ultimately leads to benefits. A value chain tells a defensible story that shows how a project or service leads to a change, resulting in a benefit. For example, mangroves minimize wave attenuation, which can reduce flooding levels from a flooding event, and in turn reduce the flood damage.
- When looking for case studies, try to select those with similar conditions. Consider geography, land use and development, and socioeconomic profile. Also, note that those from an academic or peer-reviewed journal may carry more weight with some audiences.
- Make clear that any examples or numbers provided are meant to demonstrate the potential costs and benefits.
- Consider whether there are any ways to compare options using indicators or some quantitative metrics. Maybe you can weight or categorize the benefits by “high,” “medium,” and “low” distinctions to help you make a decision. It can be helpful to provide context about why you may not have been able to monetize costs or benefits. For example, what pieces of necessary data are unavailable, too costly, or too time-intensive to collect?

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<sup>1</sup> The PSI Global Resilience Project. *Building Disaster-Resilient Communities and Economies*. United Nations Environment Programme.

- This methodology guide does not provide an exhaustive set of the steps and information needed to do a complete analysis, in large part because there are several different methods that can be used in lieu of an economic analysis.

## Example

A city is considering infrastructure investments to reduce the prevalence of combined sewer overflows. The city has little experience implementing natural infrastructure, but is interested in considering whether some of the gray infrastructure investments could be replaced with natural infrastructure. The city officials begin an exploratory process during which they 1) identify a list of natural infrastructure types that could help manage stormwater, 2) assess the typical costs for these natural infrastructure systems, 3) use the literature to estimate the amount of stormwater that can be managed with these systems, 4) identify which gray infrastructure investments could be eliminated or reduced, and 5) identify co-benefits of these natural infrastructure types. Because the city is in the early-planning stages, they decide to not conduct a benefit-cost analysis or cost-effectiveness analysis. Instead, they interview some experts and describe qualitatively the potential for reduced gray infrastructure, the natural infrastructure costs, and the co-benefits of natural infrastructure. This information can be a starting point for doing an economic analysis.

Additionally, more sample qualitative analyses can be found in the PSI Global Resilience Project's 2014 report. In particular, the report considers the impact of mangroves on cyclone risk reduction.

## Additional Resources

### Getting Help

- Reach out to our team ([econguidance@noaa.gov](mailto:econguidance@noaa.gov)) for specific questions or to brainstorm how to start your survey, interview, or literature review study.
- Hire a private consultant or request support from academic partners. Researchers, graduate students, and academic scholars may be able to provide guidance or work directly on your survey, interview, or literature review.

### Training

- [Social Science Basics for Coastal Managers](#) – Provides a foundation for various social science approaches and will help with interviews, focus groups, and surveys

### Guidebooks

- [Introduction to Social Network Analysis](#)
- [Introduction to Stakeholder Participation](#)
- [Introduction to Survey Design and Delivery](#)
- [Benefits of Coastal Infrastructure](#)

### Collections

- [Green Infrastructure Effectiveness Database](#) – This literature database contains a repository of articles on the efficacy of natural infrastructure projects and their benefits and will help with literature reviews
- [Peer-to-Peer Case Studies](#) – Collection of coastal case studies (navigate to the left side of the Digital Coast Training page; under “Training Type,” click on “Case Studies”)