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ASSOCIATION



Planning with Nature

Adaptation to Sea-Level Rise Workshop

Breakout Group Activities: Five Steps to Implementing the Framework

These instructions guide workshop planners and facilitators through five steps to implementing the [Sea Level Rise Adaptation Framework](#), a framework developed by Point Blue Conservation Science and the San Francisco Estuary Institute, in partnership with the County of Marin. Each step includes a small group breakout activity.

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STEP 1: ASSESS VULNERABILITY

Assess vulnerability to sea level rise at the appropriate scale (e.g., by Operational Landscape Unit (OLU))

Learning Objectives

- Participants will be able to describe the key outputs of a vulnerability assessment, and be able to relate these outputs to the next steps of the framework (i.e., how the outputs will be used)
- Participants will be able to explain the importance of planning at the appropriate scale (e.g., OLU concept, though that specific term does not need to be used).

Materials

- Map of the project area with 2 different sea level rise layers on top.
- Different colored post-its
- Pens
- Flip chart and markers

Activity

Breakout Group participants introduce themselves.

Ask the group to think individually for a few minutes and write down the vulnerabilities they think about with this case study. Ask where might vulnerabilities be for each case study and how are they related? Remind the group that it is NOT necessary to have site-specific knowledge - they should be able to discern vulnerabilities from the maps. Ask the group to:

- ID locations on the map with stickies where participants expect vulnerabilities.
 - Optional: use the colors of stickies to show sensitivity (i.e. blue low, yellow medium, red high)
- Write on the sticky
 - What the vulnerability is
 - What the source is
 - What is the timing of the exposure or adaptation need (near term or long term)?
 - Estimate adaptive capacity (1-3 scale, low to high)

Planning at the appropriate scale (assign a note taker):

- Are there threats outside of the project planning area that may require adaptation? Could that adaptation affect assets in the project area? Will adaptation in the project area affect assets outside of the project area?
- Some examples to consider: One landowner decides to adapt to vulnerabilities by building a sea wall, the sea wall causes erosion of beaches on adjacent properties.

Adaptation to future drought could be to build a dam for increased water supply but this could cut off sediment supply to the lower watershed.

- Record ideas on flip chart

Outputs

- Poster maps with stickies representing each vulnerability on the map (natural and built environment)
- Assets that are affected
- Vulnerable communities/ user groups/ interested parties
- Timing of exposure
- Written summary of scale that the project might need to consider

Debrief

This can be brief if everyone is familiar with vulnerability assessments (VA) as this is just a building block for future steps.

- Did it go well, was it hard/frustrating?
- Did it make sense to consider vulnerabilities at the larger scale?
- Does the VA step tie into your work? Has a VA been completed for your area? If not, should it? (allows people to see past a workshop to how they apply concepts and approaches)

Key Takeaways

- VA's are a necessary first step and should consider the surrounding area.
- VA's need to consider sources of vulnerabilities to develop effective adaptation strategies at the appropriate scale

STEP 2: IDENTIFY ADAPTATION APPROACHES

Identify adaptation approaches with a focus on natural and nature-based measures

Learning Objectives

- Participants will be able to define nature-based and hybrid adaptation measures and their benefits.
- Participants will be able to locate and cite sources of reference material on nature-based measures
- Participants will be able to explain how the environmental setting creates opportunities for suitable nature-based measures, and connect where and under what environmental conditions specific nature-based or hybrid measures are appropriate.
- Participants will be able to articulate the relationships between identified vulnerabilities and appropriate adaptation measures.

Materials

For each case study/breakout station:

- Large map/poster of case study site, with adhering stickies identifying local vulnerabilities (optional)
- Easel, flip chart, tape (if necessary, assuming we can tape sheets to the wall)
- Big pens
- Partially-filled flip chart page listing adaptation resources, with space for participants to add additional resources.
- Ideally, printouts of photos of each site, showing vulnerabilities where adaptation measures may be needed.

Activity

The breakout lead explains the activity emphasizing that this is a quick activity and we'd therefore appreciate everyone's focus as much as possible.

- 1) Everyone will take a minute to look at their case study map with numbered stickies of vulnerabilities from Step 1. If there are additional photos from the site showing the vulnerabilities, they can look at those too.
- 2) Optional- Depending on how many vulnerabilities there are, the facilitator will split the breakout group into that many subgroups (work with who is next to you on a particular assigned vulnerability).
- 3) Whole group (or subgroups) will suggest, discuss, and list Nature-based adaptation measures addressing their vulnerability and associated co-benefits on a flip chart. Facilitators will help prompt thinking as necessary. Optional: Co-benefits could include **1-3 asterisks** depending

on whether the benefit appears in short, medium, or long term.

Vulnerability	Adaptation measure	Co-benefits (1-3 asterisks for S, M, or L term)
1		
2		
3...etc.		

- 4) The breakout group/subgroups will briefly share how they approached thinking about their adaptation measures and co-benefits. If there's too little time, breakout groups can just review the flipchart page. As time and inspiration allow, breakout facilitators should encourage their participants to add additional resources for adaptation measure planning that they know about and like (via stickies on the flipchart starter list).

Outputs

- List of adaptation measures for each case study for a given vulnerability on a flip chart
- Adaptation measures as stickies on a map for each case study
- Additional resources for more info on adaptation measures. (optional)

Debrief

- Did it go well, was it hard/frustrating, etc.?
- What did you learn about adaptation measures & co-benefits?
- Did it seem to lay enough of a foundation for upcoming workshop steps?
- How can you use what you learned beyond today's workshop?

Key Takeaways

- Nature-based adaptation measures have many co-benefits that may not be immediately apparent to the project planners.
- Adding different perspectives to the planning process can identify additional measures and additional co-benefits.
- Thinking about larger spatial scales can influence what co-benefits might be associated with smaller scale nature-based adaptations.

STEP 3: ENVISION DESIRED FUTURES

Define a vision or alternate visions, goals, and the outcomes desired by communities within the appropriate landscape scale to guide development of adaptation strategies.

Learning Objectives

- Participants will be able to acknowledge and value the role of a visioning process with their respective communities in selecting appropriate nature-based solutions.
- Participants will be able to recite and explain the components of a vision necessary to guide adaptation strategy development (e.g., desired outcomes, key assumptions/criteria, planning time horizon, level or risk reduction Etc...)
- Participants will be able to clearly relate the link between a desired future and the appropriate nature-based strategy to achieve that future. Participants will be able to explain how differences in a desired future state can change possible or desired adaptation strategies.

Materials

- Poster map of sites
- Flip charts
- Post-it notes
- Pens

Activity

The breakout lead introduces and explains the activity covering the concepts described here. There are many ways to combine individual adaptation measures into a comprehensive adaptation strategy. To make decisions on which measures to use, where, and for what purpose, a guiding vision and set of desired outcomes is necessary to achieve a particular desired future. Managing the shoreline entails more than managing the risk to key assets. There are other benefits, such as wildlife support, water quality, recreation, or carbon sequestration, that need to be maintained or that could be further enhanced. It is therefore important to work with stakeholders to express desired futures as a series of goals articulated and illustrated in visions of the future landscape.

Each vision needs specific goals and a planning horizon. A goal may be to “protect the wastewater plant from an 100-year flood event up to 2070” or “to allow the existing marshes to accrete and migrate with 3 feet of sea level rise.” The planning horizon could be set by the working life of major assets or by thresholds of the amount of sea level rise. The vision could be described with text and sketched maps or illustrations that show what the landscape would look like.

There may be a number of visions that get developed around priorities such as “equitable access to nature”, “minimize risk to critical facilities”, or “keep the present shoreline alignment”. Multiple visions can be used to help illustrate choices and trade-offs to stakeholders, and an iterative process can then occur where elements of different strategies may ultimately get combined into a final selected strategy.

- 1) *Present day*. Prompt group to verbally share what they value about the area right now, as well as some of the issue areas. Think about this from your personal perspective then from a different stakeholder’s perspective. Capture ideas on flipchart or white board.
- 2) *Future*. Now think about the future of the area. Have each individual write declarative statements on separate post-its about what the area will look like in 50 years. Statements should reflect what they want to KEEP and also IMPROVE, including:
 - a) quality of environment
 - b) specific land uses, and
 - c) infrastructure and amenities present.
- 3) *Sorting*. Group does a quick sorting of ideas. Lump like with like. Note where there are contrasting viewpoints that need further discussion. This is where the facilitators will start to lump the ideas into two or more different visions.
- 4) *Discussion*. Facilitator asks the group to talk through entries by topic. As necessary, calling on post-it note contributors to talk through what they were thinking to spur discussion

Outputs

Titles for at least two visions with accompanying values written on flipchart

Debrief

- Did it go well, was it hard/frustrating, etc.?
- What did you learn about the value of incorporating different perspectives?
- How can you use what you learned beyond today’s workshop?

Key Takeaways

- A successful shoreline adaptation strategy requires a clear vision developed in collaboration with diverse stakeholders containing specific goals that balance risk management and enhance ecological, social, and recreational benefits.

STEP 4: COMBINE SUITABLE ADAPTATION MEASURES INTO STRATEGIES

Identify adaptation measures appropriate for the location that address the vulnerabilities and can be implemented together to achieve the vision.

Learning Objectives

- Through case studies, participants will be able to explain how individual measures are linked to form an integrated strategy, address identified vulnerabilities, and meet the goals/desired outcomes of the guiding “vision” from Step 3.
- Participants will be able to articulate the partners and expertise needed to develop multi-benefit strategies

Materials

- Flip chart and markers
- Copy of [Sea Level Rise Adaptation Framework](#), page 17

Activity

Overview:

- Develop a strategy for each vision. There may be one or more strategies for each vision.
- Determine what combination of measures could be used where and when to achieve the goals of each vision.
- Organize the measures into a strategy using either a spatial, timeline, or narrative approach.

Instructions:

- Briefly introduce the concept - taking measures from Step 2 and organizing them in a way that will achieve the visions outlined in Step 3. Provide examples of how to select and organize strategies for each desired future (see page 17 of Adaptation Framework)
- Review Step 2 menu of options and Step 3 visions.
- Select measures from Step 2 that will enable future vision to be realized.
- Discuss how measures would be implemented - in parallel? In sequence? Organize measures using one or more approaches:
 - a spatial approach (measures identified on a map of the site)
 - a timeline approach (e.g. implement measure x in 2050)
 - trigger events (e.g. implement measure x when annual overwash occurs)
 - a narrative/descriptive approach.
- Identify the asset categories (e.g. wildlife, private road, public school, recreation trail) of the site to set up Step 5 discussion on benefits of each strategy for those categories.
- Need enough detail to identify benefits of each (e.g. increase recreation vs. wildlife habitat).
- Repeat for the second vision for the site (need at least 2 strategies for Step 5).

Outputs

- One strategy for each vision developed in Step 3
 - The measures used
 - The timing of implementation
 - A list of asset classes that will feed into Step 5
- Diagrams drawn on a flip chart

Debrief

- How did the strategy process go?
- What in particular was difficult? Has anyone experienced that in real life? Does anyone in the room have advice for overcoming that?
- How will you use this process to inform your project planning?

Key Takeaways

- There are trade-offs across different visions
- Different visions require different actions
- It's important to think of the whole strategy long-term rather than individual adaptation measures

STEP 5: EVALUATE AND PRIORITIZE STRATEGIES

Learning Objectives

- Participants will be able to categorize benefits relevant to their community/project, articulate the logic of linking benefits to the desired community vision criteria from Step 3.
- Participants will be able to illustrate the process for visualizing and evaluating benefits and trade-offs among alternative strategies developed in Step 4, including connecting benefits to metrics, compare/contrast adaptation strategy alternatives (e.g., regarding feasibility, cost, efficacy, pros and cons of identified benefits/trade-offs), and prioritize.

Materials

- Flip chart with blank prioritization tables (see below)
- Pens
- Colored dot stickies

Activity

Set-up:

Flip chart with a matrix containing two strategies for each case study (ie., hold the line, maximize restoration, maximize recreation) and the benefits associated with each (see table below as example).

Instructions:

Each breakout to review strategy options from Step 4 and consider what benefits are associated with the strategies. Facilitator solicits a list of benefits from the group (pull from the listed assets from the vision) then asks how each benefit could be quantified (yes/no, number of miles of x, number of acres of habitat, etc.). Assign a colored dot to each benefit (e.g., red for wildlife). Each person gets a set number of dots of each color (3 or 4?). Ask the group to place a number of their colored dots in the benefits column next to the appropriate strategy. Then have the group discuss. Is it the right spread?

Optional Next step:

Explore the impact of weighting benefits differently. Then redo the weighting and re-examine the results. Add a weight value to each color, then you can add up across colors.

Alternative: first only look at the cost of strategies and assess. Then fold in other benefits. Do top strategies change?

Dealing with uncertainty- there is value in a quick and dirty sensitivity test. At what point does the uncertainty matter? Is some amount of flooding tolerable? Depends whether it's a house, parking lot.

Benefits to consider: (make sure the benefits are described such that more votes = better outcome)

- Flood risk reduction
- Wildlife habitat
- recreation, etc.
- Long-term cost savings (not “cost” where more = worse)
- Project cost savings

Outputs

Flip chart with strategy options evaluated or ranked based on the group’s values.

Example matrix of strategies with associated benefit categories weighted by votes

	wildlife habitat	recreation	reduced flood risk	cost savings	TOTAL
STRATEGY 1	(# dots)				
Maximize habitat	10	7	5	5	27
STRATEGY 2					
Hold the line	2	1	7	7	17

Debrief

- What worked well? What would you revise for your strategy/vision?
- Were there benefits you didn’t consider? Did they change how strategies were ranked?
- What were some of the “sticky” points and how would you deal with that in your strategy/vision (weighting benefits, measuring intrinsic value)?

Key Takeaways

- Considering multiple benefits may lead to selection of nature-based strategies over traditional ones.
- Strategy choice might change depending on the benefits chosen and weighting. Importance of including the right stakeholders and identifying and measuring the right benefits.
- Importance of including benefits that can’t be easily quantified. It’s part of the dialogue.
- You can add in other benefits along the way if you notice it’s missing.