

Job Aid: Dealing with Trade-Offs in Adaptation

Definition

A trade-off is a choice in which one thing of value has to be given up in order to get something else that is also of value. In adaptation contexts, trade-offs are very likely to emerge, although sometimes, they can be averted through reframing of the choices involved. However, decision-makers frequently confront these challenges, and may increasingly confront them, the more challenging the climate-related changes become.

Trade-offs and Adaptation Success

The notion of trade-offs can be difficult to reconcile with that of adaptation “success”, as trade-offs – by definition – involve a gain of one thing of value but concurrently the loss of something else. It is indeed difficult to imagine a situation where climate adaptation is perceived as successful for or by everyone, at the same time, and on all scores. But it is unclear that stakeholders would apply such a high bar, or – differently put – have such unrealistic expectations.

Rather, recognizing that climate change adaptation involves difficult decisions, decision-makers and stakeholders aim to reach the best possible solution, find the most workable compromise or minimize harm and negative side effects.

Trade-offs can emerge in each of the Six Dimensions of Adaptation Success:

- **Adaptation process** – e.g., which stakeholders to include vs. how long the process might take
- **Adaptation decisions** – e.g., how complete the information needs to be before a decision can be made vs. the urgency of the decision
- **Adaptation actions/implementation** – e.g., whether to replenish a beach as soon as possible for added buffering vs. waiting until key shorebirds have completed their breeding season
- **Adaptive capacity** – e.g., whether to build internal capacity (which might cost more, take longer, but have lasting impacts) vs. hire a readily available consultant
- **Overcoming adaptation barriers** – e.g., removing a legal barrier that would provide more adaptation flexibility vs. keeping a rule or law as is because it could open a difficult-to-control “can of worms”
- **Adaptation outcomes** – e.g., tangibly increased safety for people but permanent ecological or economic losses

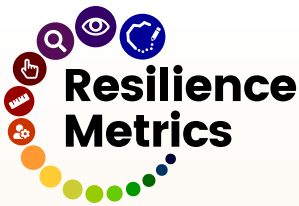
The Easy and the Hard

Some trade-offs are fairly easy to resolve if they can be compared along similar dimensions (such as in economic terms). But most trade-offs involve dissimilar comparisons (the proverbial “apples and oranges” problem). In addition, trade-off decisions are often made more difficult by:

- Inadequate information of some of the alternatives
- Irreducible uncertainties about the future
- Competing values and interest, within and among stakeholders
- Different degrees of risk tolerance among stakeholders
- Lack of agreement on the right planning horizon
- Overlapping jurisdictions and decision authorities
- Lack of or low trust among those involved in decision-making



This job aid 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.



Related Job Aids:

- How to build trust
- How to bring the right stakeholders in the room
- Structured decision-making
- Common principles of good governance
- Good adaptation actions
- Assessing and tracking “good” adaptation outcomes

- Lack of single or simple solutions that will satisfy all involved
- Inadequate budgets to accomplish all adaptation goals

To the extent possible, those involved in an adaptation process should attempt to address some of these issues before it is time to make hard choices. Differently put, when long-standing distrust, turf issues, jurisdictional ambiguity or other structural challenges exist and are not dealt with, it is extremely difficult to get to a satisfying decision about tough adaptation options. Stakeholders will attempt to “get their way” and be unwilling to compromise and not be open to deliberation because of a prior bad experience or chronic dissatisfaction. This is why establishing successful adaptation processes is foundational for making successful adaptation decisions.

Working Through Trade-offs: Process Elements

- Establish a deliberative and participatory decision-making process in which a diversity of related interests, concerns and needs can be voiced and are taken seriously. The process will need to:
 - Include technical considerations
 - Balance competing safety, environmental, ecological, economic, and other objectives of participants
 - Appropriately treat risk and uncertainty; and
 - Make space for and be responsive to public concerns
- Formal adaptation processes should be matched by formal decision-making procedures. Particularly for complex and likely-to-be-contentious issues, use structured decision-making frameworks that aim at making choices and decisions transparent and traceable for all involved. Standard components of such frameworks (e.g., the **ProACT** framework by Keeney and Raiffa, 1993) include:
 - Clarify the decision **P**roblem
 - Identify the decision **O**bjectives and ways to measure them
 - Create a diverse set of **A**lternatives
 - Identify the **C**onsequences of each alternative relative to the objectives and criteria
 - Clarify the **T**rade-offs
- Even less formal procedures involve elements of the more formalized approaches. To get at what matters to people in making trade-off decisions, help stakeholders to:
 - Identify their goals by asking them to specify what they'd like to see accomplished and how they would like to get there (as both process and outcomes matter)
 - Explore and identify shared and divergent values, particularly those that they hold most sacred or care about most (as those point to the issues that require most care)
 - List their “needs” and “wants” and then rate the degree to which each adaptation option meets their wants (as this makes different types of objectives comparable)
 - Incorporate the trade-off factors surfaced in this way into the design and evaluation steps as you decide among alternative adaptation options or pathways
 - Provide information on each of the trade-off factors identified for each of the adaptation options (e.g., in a large table, presenting how each alternative fares side by side on the various factors)

Job Aid: Dealing with Trade-Offs in Adaptation

- Explore and deliberate the trade-offs together with stakeholders:
 - Are there seeming limits? Are the true limits or negotiable/malleable/changeable (e.g., often, money can be a limiting factor, but allocation of scarce resources to the myriad of communities' priorities is a choice that – in light of climate change – can be rethought)
 - If a choice implies crossing a core/sacred value, is there any way to modify the option to make it more acceptable?
- Be clear and transparent from the start about how final decisions are made (Who has authority? Who has input opportunities? Will decisions be made by delegation, majority, consensus? etc.)
- In order to maintain trust in the process, the decision-making procedures agreed in the beginning must be implemented faithfully. Any changes to the process need to be transparently discussed and agreed on with those involved and concerned.

After the Trade-off Decision

Dealing with trade-offs typically does not end after a difficult decision was made. A number of further steps are important to deal with the impacts of the decision so that stakeholders feel their needs and values are respectfully addressed.

- **Reframing the issue** – Reframing the trade-off choice may be part of the process all along, in that the options pitched against each other can be helped by seeing them through a different lens or in a bigger context, or by expanding the range of options (see resources on “multi-solving”). But reframing of a difficult choice (sometimes initially viewed as a winners-vs.-losers issue) into an instance of a community coming together and working constructively through a challenge, i.e., as a sign of positive progress, is an important step in stakeholders owning the decision and accepting the reality they now need to embrace.
- **From grief to acceptance** – Having finally made a difficult choice after a long and maybe intensely emotional process is also not the end of those emotions. If something of value had to be let go, community members may experience loss, grief, anger, regret and related emotions. Mourning those losses consciously is an important element of healing – personal losses and community rifts – and eventually acceptance. Involving the arts, faith communities, community-based organizations, social workers, skilled process facilitators, etc. can be very helpful.
- **Compensation** – As part of the trade-off decision-making process, compensation may have become part of the final agreement, and now needs to be implemented expeditiously and fairly. Sometimes, this is monetary compensation, but can also include property swaps, structural/ institutional changes, or other ways people can feel made whole again after loss.
- **Assistance** – And even when no monetary or material compensation ensues, the changes agreed upon may require technical assistance or other forms of practical support to realize. This, too, needs to be implemented expeditiously and fairly.
- **Monitoring of benefits and side effects** – Some trade-off agreements involve monitoring whether and to what extent expected benefits or possible negative side effects do in fact unfold as a result of the adaptation option selected. Monitoring those positive and negative effects must be set up in a timely fashion, and results should be communicated openly and regularly to stakeholders.



Resources

Structured Decision-making

- Gregory, R., L. Failing, M. Harstone, G. Long, T. McDaniels & D. Ohlson (2012). *Structured Decision making: A Practical Guide to Environmental Management Choices*. Hoboken, NJ: Wiley and Sons.
- National Academies of Sciences, Engineering, and Medicine (2018). *A Decision Framework for Managing the Spirit Lake and Toutle River System at Mount St. Helens*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/24874> (free access)
- Ohlson, D. W., G. A. McKinnon & K. G. Hirsch (2005). A structured decision-making approach to climate change adaptation in the forest sector. *The Forestry Chronicle* 81: 97-103. <https://doi.org/10.5558/tfc81097-1> (free access)
- Martin, J., P. L. Fackler, J. D. Nichols, B. C. Lubow, M. J. Eaton, M. C. Runge, B. M. Stith & C. A. Langtimm (2011). Structured decision making as a proactive approach to dealing with sea level rise in Florida. *Climatic Change* 107: 185-202. <https://doi.org/10.1007/s10584-011-0085-x>.
- Lienert, J., L. Scholten, C. Egger & M. Maurer (2015). Structured decision-making for sustainable water infrastructure planning and four future scenarios. *EURO Journal on Decision Processes* 3: 107-140. <https://doi.org/10.1007/s40070-014-0030-0>

Multi-solving

- Overview, access to research and case studies: <https://www.climateinteractive.org/programs/multisolving/>
- The FLOWER multi-solving tool: <https://www.climateinteractive.org/programs/multisolving/flower/>

Dealing with the emotional impacts of climate change and adaptation

- Publications on the emotional impacts of climate change and how to deal with them by Susanne Moser (most are freely available at): <http://www.susannemoser.com/publications.communications.php>
- Clayton, S., C. Manning, K. Krygsman & M. Speiser (2017). *Mental Health and our Changing Climate: Impacts, Implications, and Guidance*. Washington, DC: ecoAmerica. <https://www.apa.org/news/press/releases/2017/03/mental-health-climate.pdf> (free access)
- Climate Psychiatry Alliance: <https://www.climatepsychiatry.org/>
- Good Grief Network: <https://www.goodgriefnetwork.org/>