Using Ecosystem-Based Management Tools Effectively

Ecosystem-Based Management Tools Network
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Although types of EBM tools and EBM projects differ greatly, the following advice can be helpful for avoiding common mistakes when using EBM tools and for using EBM tools effectively. In many situations, the process for using tools and communicating tool results is just as important to whether tool results are used in management as the tools or tool results.

Getting Started

- Make sure you understand the time, funding, and expertise needed to collect the data needed to use the tool (or tools); run the tool; and interpret and communicate tool results. [See the accompanying Preparing to Use EBM Tools document for a more comprehensive list of issues to discuss when getting started using tools.] One of the best ways to gather this information is by talking to previous tool users and the tool developer.

- Allow enough time for an iterative process. Tool use is most effective when stakeholders can explore a range of alternatives and make improvements to scenarios (and possibly the tools themselves) as they learn about the process, the tradeoffs involved in meeting diverse objectives, and the possible results of different decisions.

- Make sure you are using tools that provide the types of results that you need. Some tools provide general indices rather than quantitative results, while others provide highly quantitative results which may need to be generalized for management and communication purposes. In addition, some tools may not provide results at the temporal or spatial scales appropriate for the management decisions that you need to make.

- Don't expect tools to provide all the answers. Tools are generally best used to make strategic decisions (such as choosing where to place conservation areas to help achieve both fisheries and biodiversity objectives) rather than tactical decisions (such as setting fisheries catch limits).

Data Issues

- Invest in the data management and documentation process up front by accounting for data management and documentation in project design and budget. Well-managed and documented data is much more useful to a project because it can be used by multiple collaborators over a long time period.

- Recognize that poor input into tools or models will result in poor output. There is no clear threshold for when data or analyses are too limited or flawed to be valid, but projects should always be alert to this possibility. Less data precision is needed for regional and/or long-term decisions than local decisions for immediate needs.

- Recognize that even though data and tools are incomplete and imperfect, decisions will be made on incomplete data whether tools are used or not. Tools may still be able to facilitate and improve EBM processes even if there are data gaps or flawed data.

- Be open and honest about data gaps and the uncertainty of existing data. Identifying and presenting data gaps up front will lend credibility to the process and help focus resources on gathering needed data. The data collection process can be a beneficial to a project if it is used as a time to build partnerships and a common body of information.

- Incorporate human knowledge into the decision making process. Subject matter experts can fill in gaps in existing data sets, and local resource users are often one of the best sources of information about historical and current resource use and condition. Collection of human knowledge should use rigorous social science data collection techniques.

- Plan for a long-term data acquisition process to ensure a steady stream of current and accurate information.

Engaging Stakeholders and Building Collaborations

- Figure out the full range of stakeholders for your project and engage them in the EBM process and tool use as soon as possible. Stakeholders are any people or groups who will influence, be affected by, or have responsibility for potential management actions. It is critical to engage stakeholders as soon as possible because:

    - It helps build a common knowledge base among stakeholders about the project and the issues the project is addressing.

    - It helps ensure that the full range of stakeholder concerns and interests are understood and accounted for.

    - Tool result "customers" such as natural resources management agencies and local governments are more likely to use tool results to inform their actions if they participated in generating the results.

    - Stakeholders that are affected by EBM decisions such as recreational fishermen are more likely to view tool results as legitimate and comply with EBM implementation if they participated in decision making processes.

- When presenting to and working with stakeholders, tailor presentations and materials to different audiences. For instance, natural resource managers, municipal officials, industry representatives, and concerned citizens may be interested in different levels of information about tools and tools results.

- Make sure stakeholders understand that using tools is a way to evaluate the possible results of different decisions not the way decisions are made.

- Figure out what role different stakeholders will play in tool use. At a minimum, stakeholders should know what tools will be used, why they were chosen, the information that the tool provides, the level of uncertainty of tool results, and how tool results will be used in decision making processes. If some situations, it may be

possible to host public workshops to demonstrate how the tools work and/or let stakeholder actually use the tools themselves.

- Engage a good facilitator for the EBM process and tool use and set up clear rules of engagement for participants. Quality facilitation can make the difference between a successful process and a process that gets bogged down in partisan fighting.

- Acknowledge and account for stakeholders' primary interests and mandates. Even when people or groups are committed to EBM, they will generally have other primary interests and mandates and may only be able to contribute to EBM when it is clear that they can meet these primary interests through or in addition to EBM.

Running Tools

- Perform sensitivity analyses (examinations of how much outputs change when inputs are altered) whenever possible. These analyses can help you understand your tool or model results and identify if there are crucial points where minor changes in input parameters have a major change in outputs. Generating a range of tool results also helps demonstrate that tools show possibilities not answers.

- "Make everything as simple as possible but not simpler." [Attributed to Albert Einstein] Tool analyses and results can get very complex. Opt for simplicity whenever possible.

- Don’t use tools or tool results in a vacuum. When using tools, seek extensive peer review of tool use methodologies to ensure credible results. One way to facilitate this input is by forming a technical advisory committee for tool use. Once tool results are generated, validate them with subject matter experts and people with extensive local knowledge to make sure they make sense. If they don't, figure out why. Data and tool analyses could be flawed, or data could be revealing new trends.

- Evaluate your tool use process once your project is well-underway or completed. The lessons that you have learned and publicly documented will help others learn from your challenges and successes.