

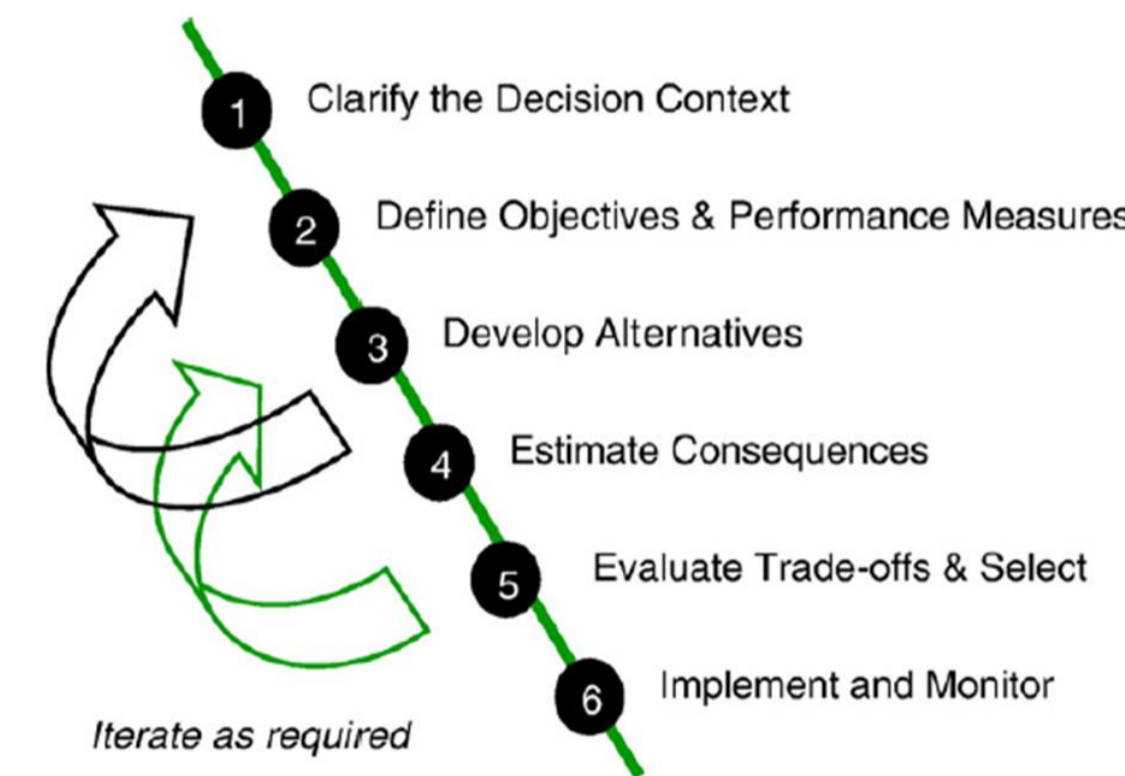
US EPA ARCHIVE DOCUMENT



Purpose/Utility of Research

Structured Decision-Making (SDM)

An organized approach to integrate Facts (Scientific Knowledge) & Values (What matters to Communities).



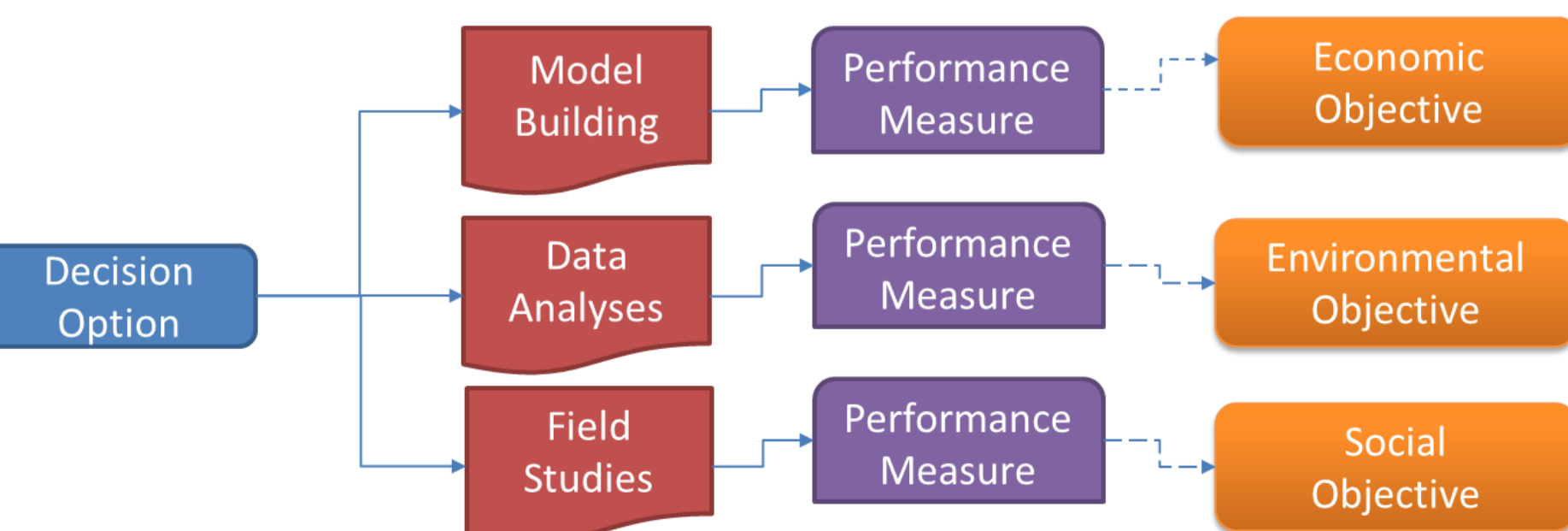
“A formalization of common sense for decision problems which are too complex for informal use of common sense”

- For finding solutions to “wicked problems”
 - Conflicting issues: economic, social, environmental
 - Divergent public values
 - Scientific uncertainty

Connection to SHC Portfolio

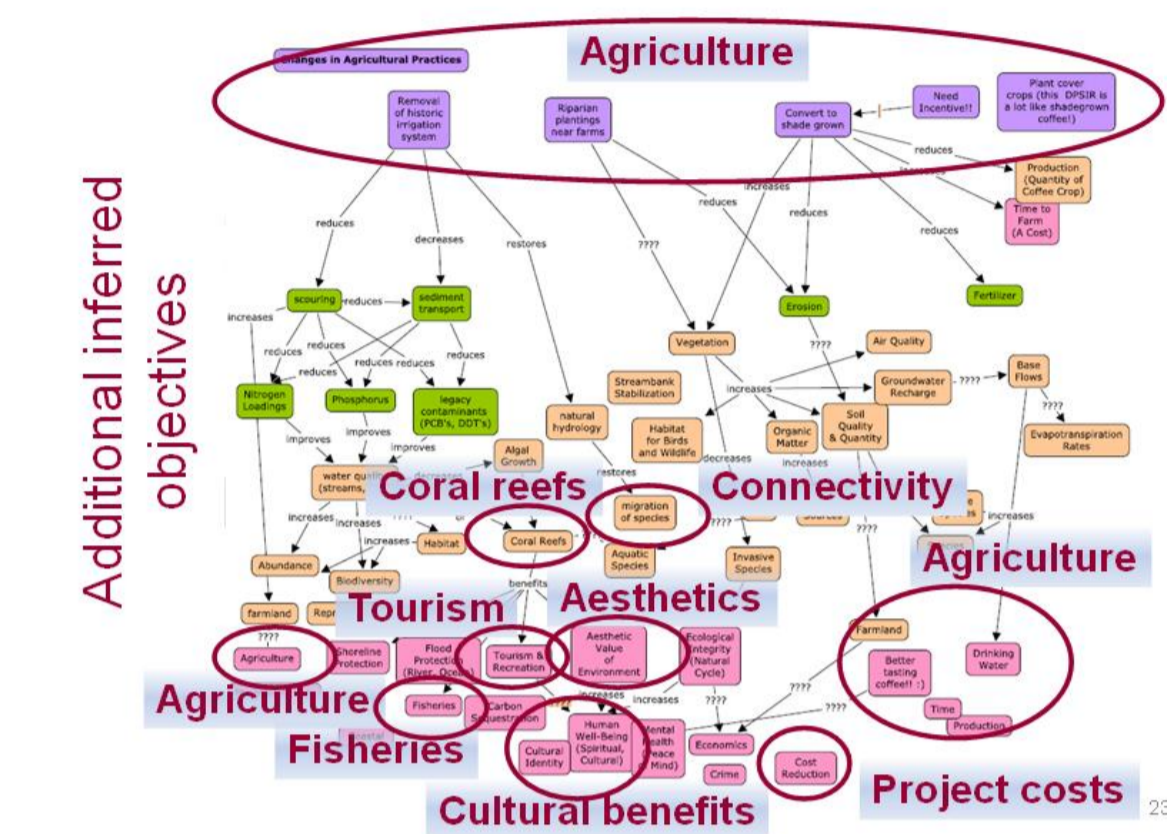
Structured Decision-Making yields an organizational framework for decision-focused application of SHC tools, information, and research.

- Helps identify needed tools and research supporting sustainability
- Clarifies linkage among decision options, SHC research, criteria, and community goals

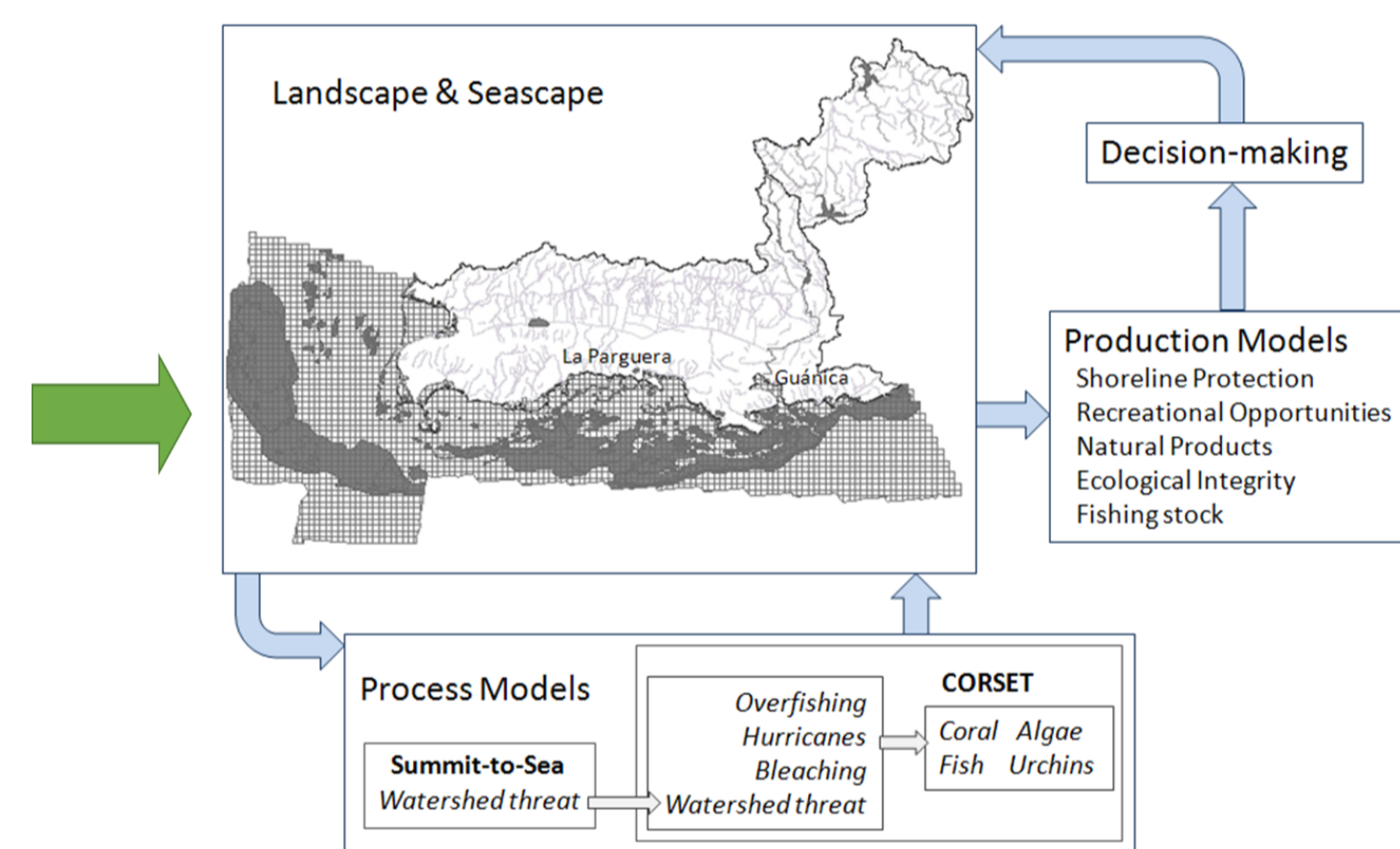


Application

SDM for Watershed management in Guánica Bay, Puerto Rico



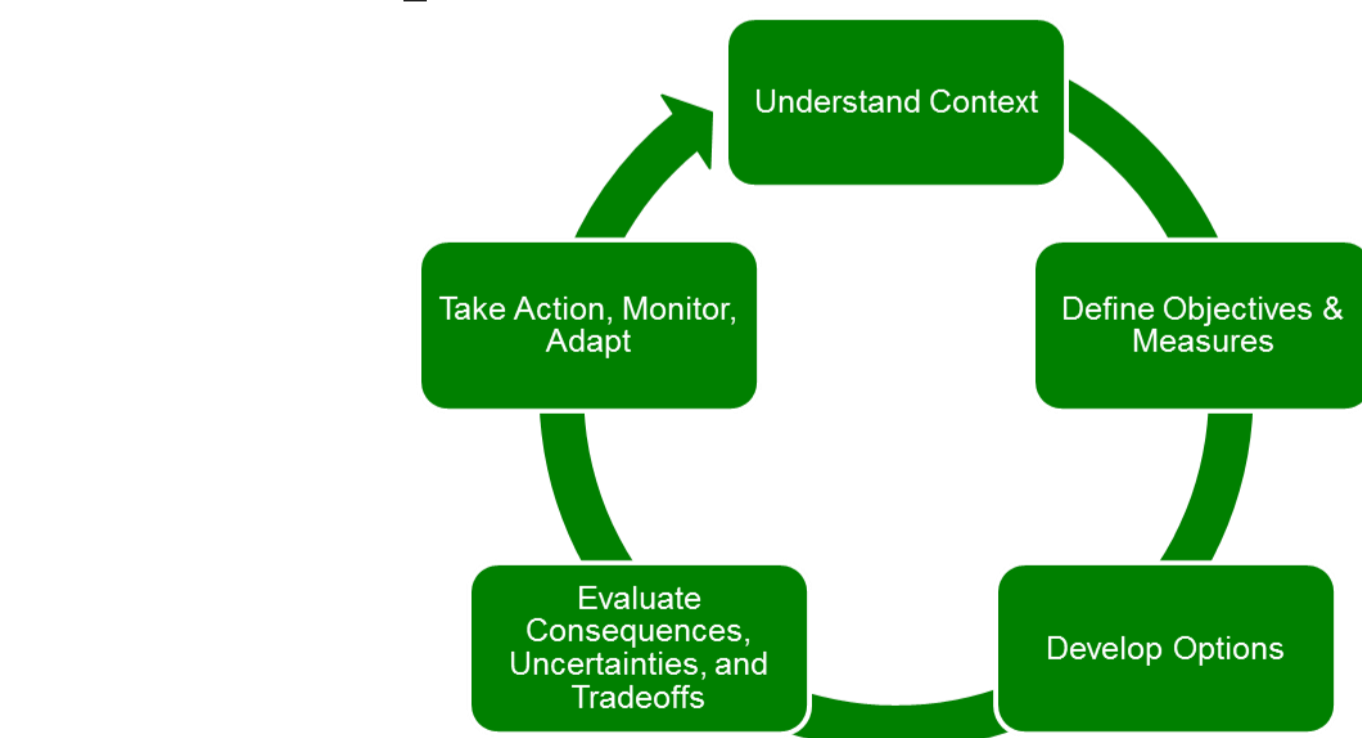
Decision Context (DPSIR) Conceptual Mapping



Scenario Modeling
 • estimate measures

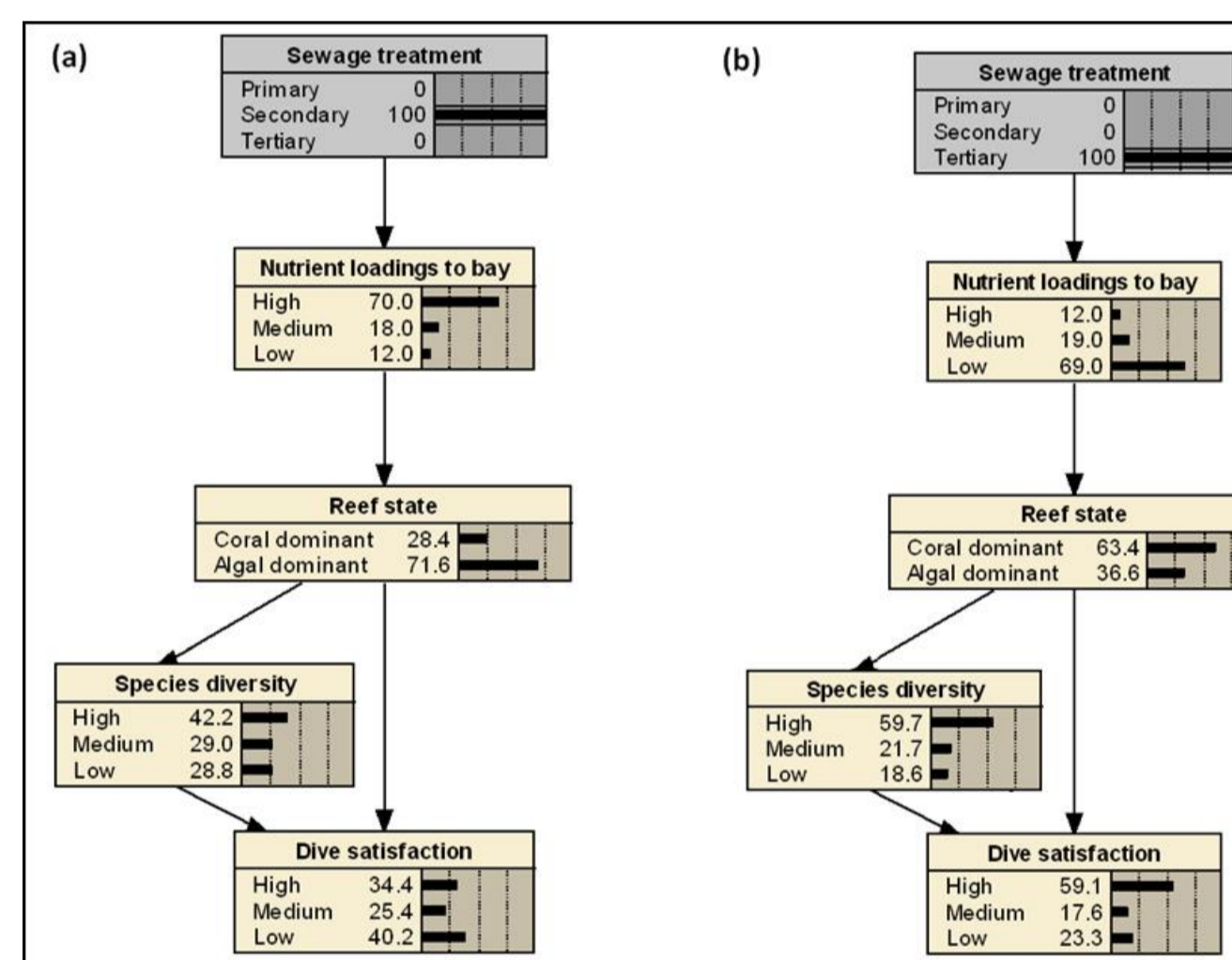
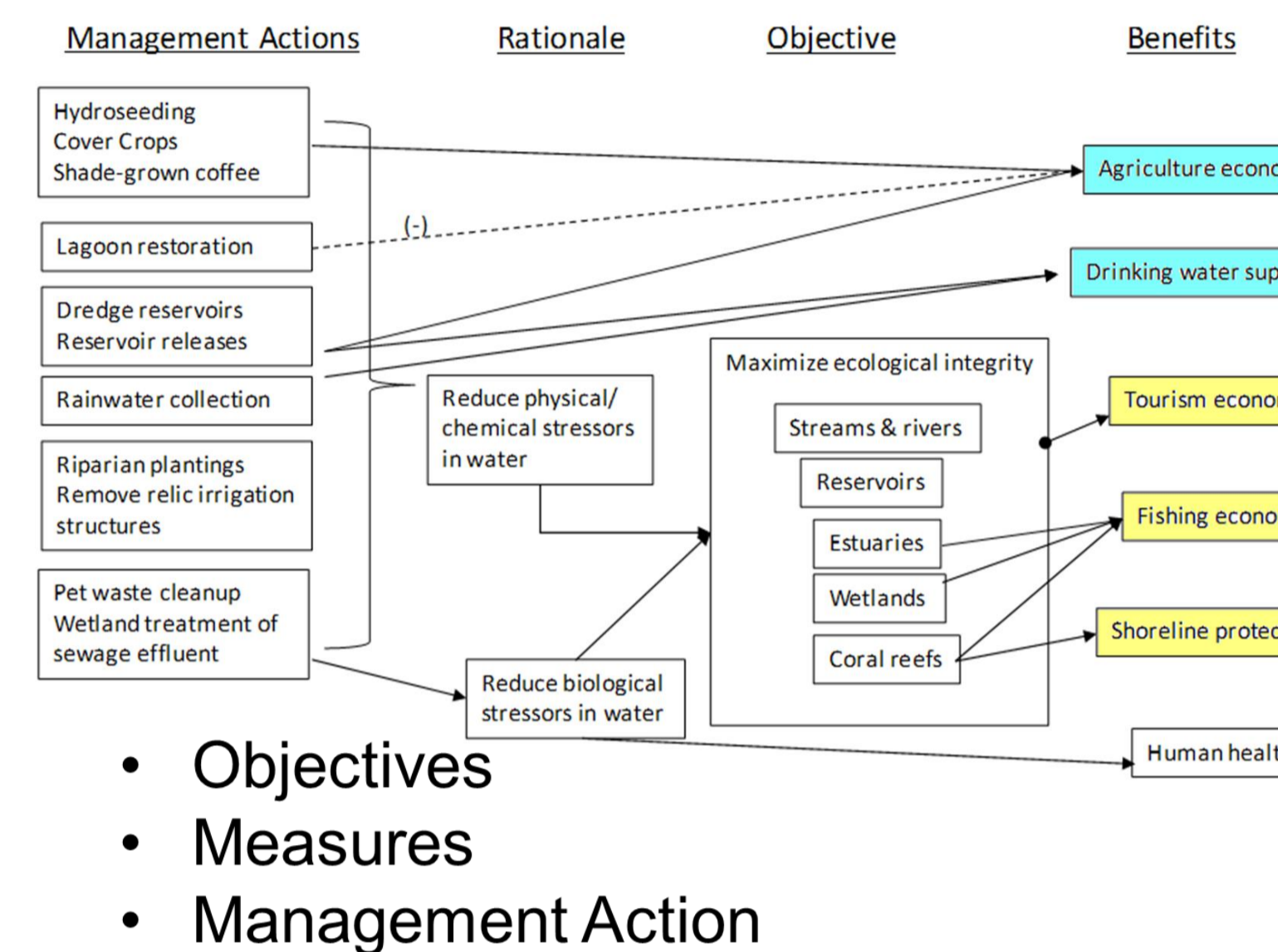
Translation

SHC Adaptations of SDM

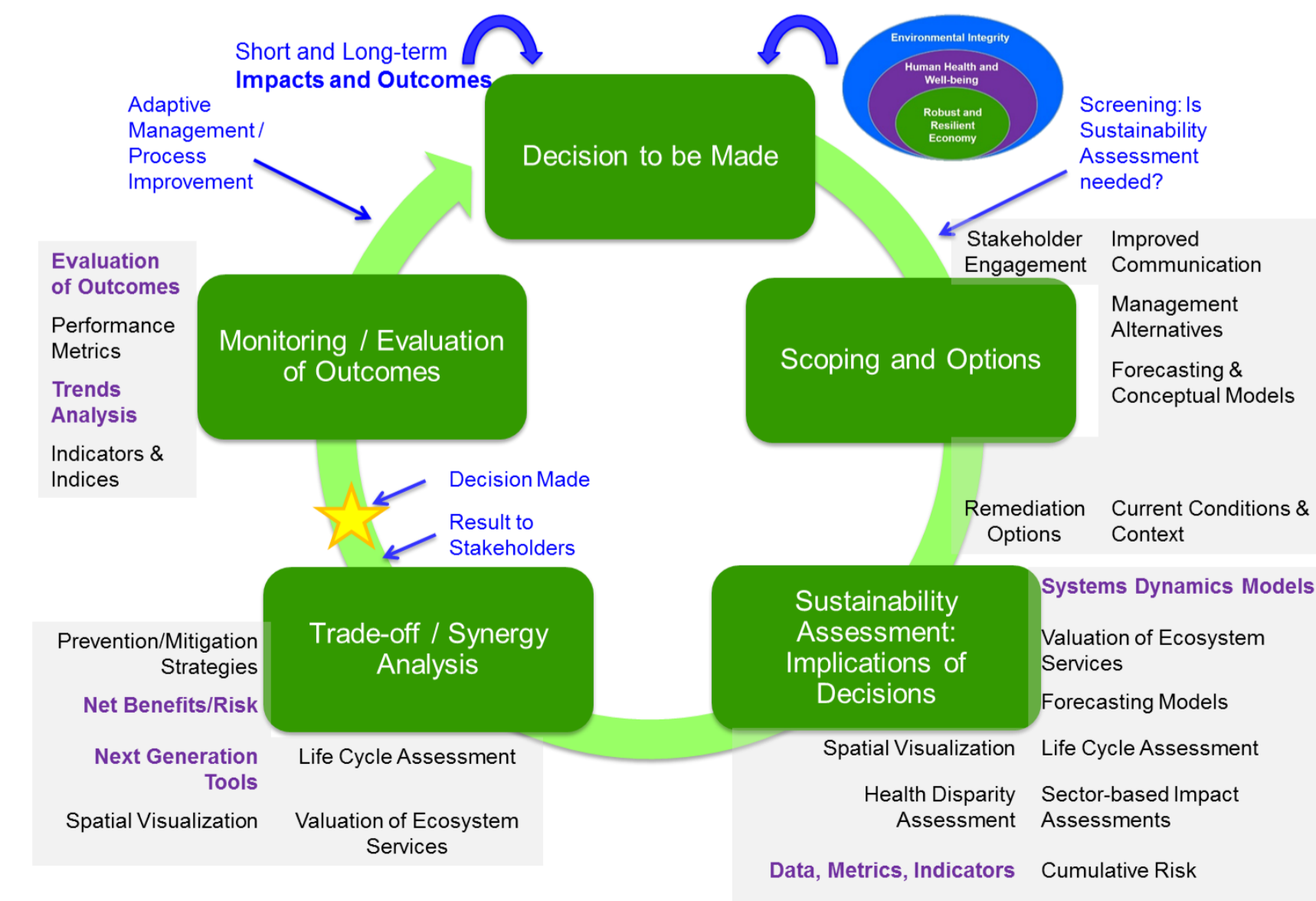


- What is the Decision Context (scope and bounds)?
- What are the objectives and what indicators should be used to measure success?
- What options address the objectives and indicators?
- How well do options achieve objectives, what are the important uncertainties, and how do trade-offs affect assessment?
- How can the decision be implemented, tracked, and modified as we learn?

DASEES SDM Process (Project 1.61)



Alternative Evaluation and Trade-offs



Sustainability Assessment & Management for Integrated Solutions (Project 4.6)

Intended End users

- SDM is an approach to framing, developing, and applying SHC tools and research to the needs of Regions, Program Offices, and Communities
- It also is a means to inform SHC of data, information, and tool gaps needed to better apply its resources for decision-making

Lessons Learned

- SDM helps manage and direct the application of data, information, and analyses towards finding an appropriate solution for a complex problem – it does not provide the answer. *People still need to make the decisions.*
- Deliberate structuring of decisions is a learned skill. Learning the ideas of SDM and applying is not difficult, but necessary first.
- While SDM is “formalized common sense” aspects of its application (decision modeling, preference elicitation) may require expertise.
- Likewise, depending on the complexity of the problem, environmental modeling (air quality, watershed loading, risk assessment) may require additional expertise.