Multi-Attribute Evaluation of Experimental Options

GCDAMP Technical Working Group

Feb 2 2004

Meeting Objectives

- Purpose
  - Identify and evaluate experimental options
- Background
  - Build on December MATA workshop results

Agenda

9:00	Introduction and summary of MATA workshop
9:30	Approach to evaluating experimental options
10:00	Define options and evaluation criteria
12:00	Lunch
1:00	Evaluate experimental options
4:00	Summarize areas of agreement and next steps
4:30	Close

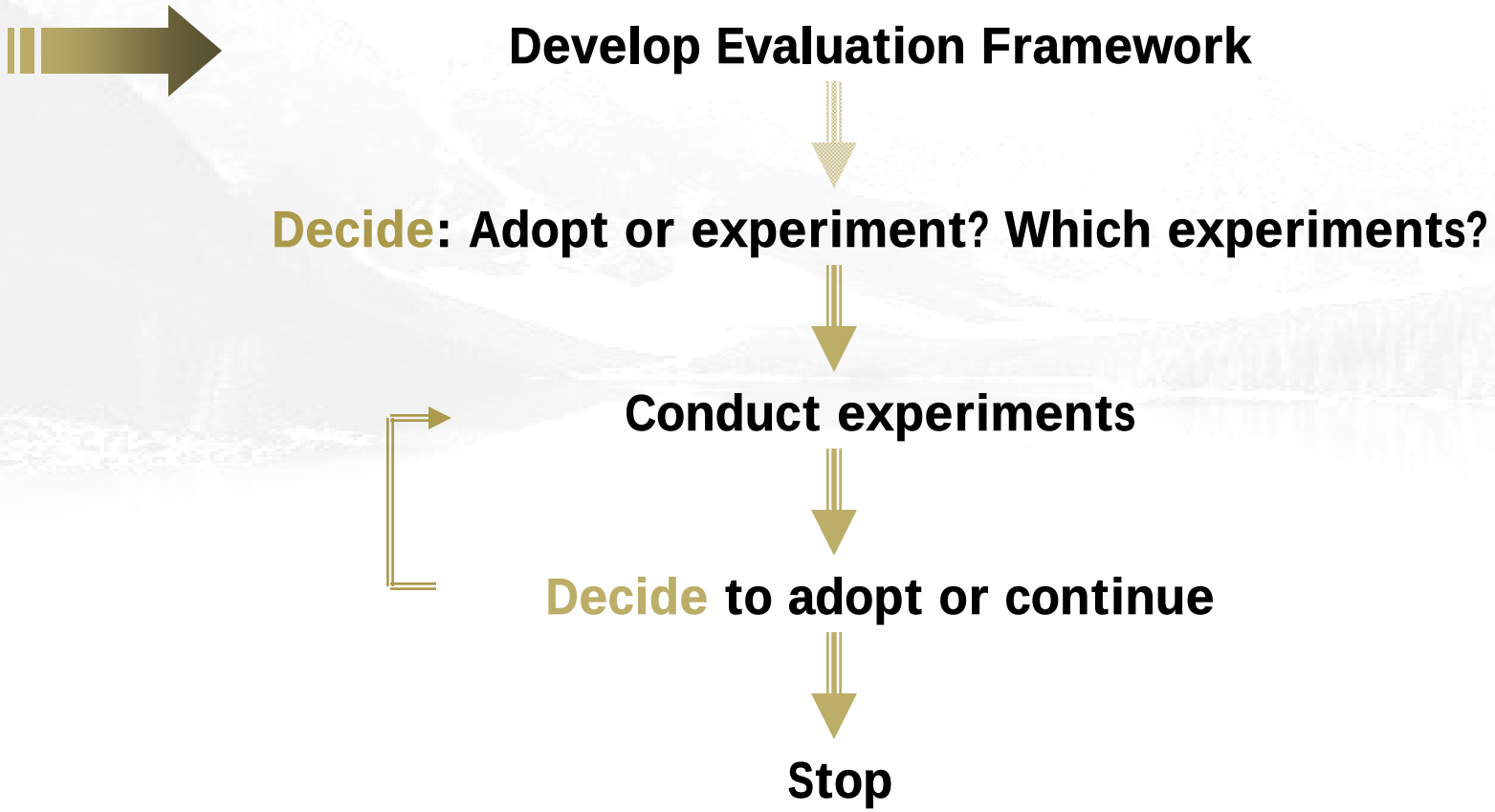
MATA Workshop:

Purpose

- Develop a framework for decision making
  - Address multiple objectives
  - Address trade-offs
  - Address uncertainties
- Gain insight into priority experimental options

MATA Workshop

Context: Sequenced Decision Making



MATA Workshop

Tasks

- Define endpoints and attributes
- Identify options
- Develop consequence table
- Evaluate/rank options
- Discuss implications for experimental priorities

MATA Workshop

Results

- Results of Workshop
  - Good progress on consequence table
  - Good understanding of the decision context
  - Beginnings of deliberative discussions
  - General agreement (?) that the MATA framework is a useful approach

MATA Workshop

Results

- Time limitations meant:
  - Limited review of consequence table
  - No opportunity to refine the options
  - Little opportunity to reflect and deliberate (either technical or value based issues)
  - Possibility of misinterpretation
    - Options, the attributes, the scores, the ranking/weighting instructions

USE CAUTION IN INTERPRETING RESULTS

The draft report provides ideas about how you could use the process to gain insights rather than definitive results

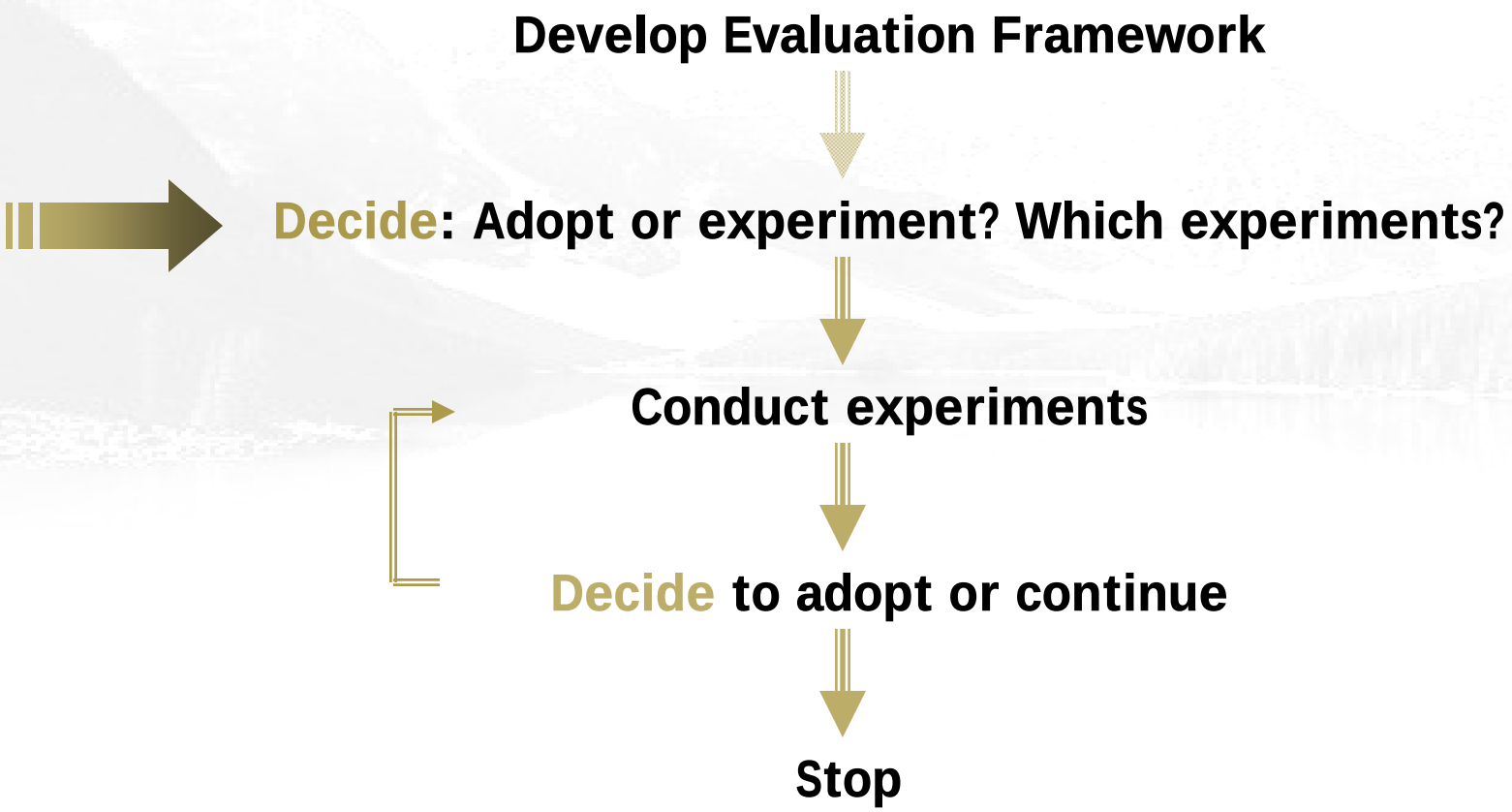
MATA Workshop

Some Key Findings

- Eliminate
  - MLFF
  - SASF
- Include
  - MECH
  - BHBF
- Candidates for testing
  - Power, FSF, TCD

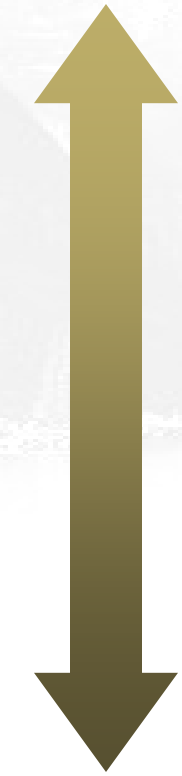
Approach to Experimental Design and Evaluation

Sequenced Decision Making



Experimental Design

Experimental Continuum



1. Adopt
   - No uncertainty, or clear winner regardless of uncertainty
2. Adopt, Monitor, Review
   - Clear winner with uncertainty
3. Sequential Experiment (Titration)
   - Several candidates, logical order, adopt upon success
4. Concurrent Experiment (Factorial)
   - Several candidates, commit to full experimental period

Experimental Design

Experimental Options

Water Year	Adopt and Monitor	Sequential (Titration)	Concurrent (Factorial) Fine
2005			
2006			
2007			
2008			
2009			
2010			
2011			
2012			
2013			
2014			
2015			
2016			
2017			
2018			
2019			

Experimental Design

Questions for TWG to Address

- Adopt or experiment?
- Long term plan; staged commitment?
- Which experimental design: titration or factorial?
- Which treatments? Sequence? Timing?
- Monitoring: short or long response variables?
- What milestones and process for review?

Purpose: To resolve technical uncertainties; NOT to resolve value differences

Experimental Design

Candidate Treatments

- Candidates for Testing
  - POWER
  - MECH
  - BHBF
  - FSF
  - TCD
  - Other?

Experimental Design

Tasks

- Define candidate treatments
- Develop alternative experimental programs
- Define criteria for evaluating programs
- Evaluate
- Areas of agreement
- Next steps