CBP Climate Resiliency Workgroup

CLIMATE SMART HABITAT RESTORATION WORKSHOP
PRE-WORKSHOP CALL

November 1, 2016

Objectives of this Call

- Orient you to the project
- Introduce the workshop objectives
- Introduce the Adaptation Design Tool we will be using in the workshop

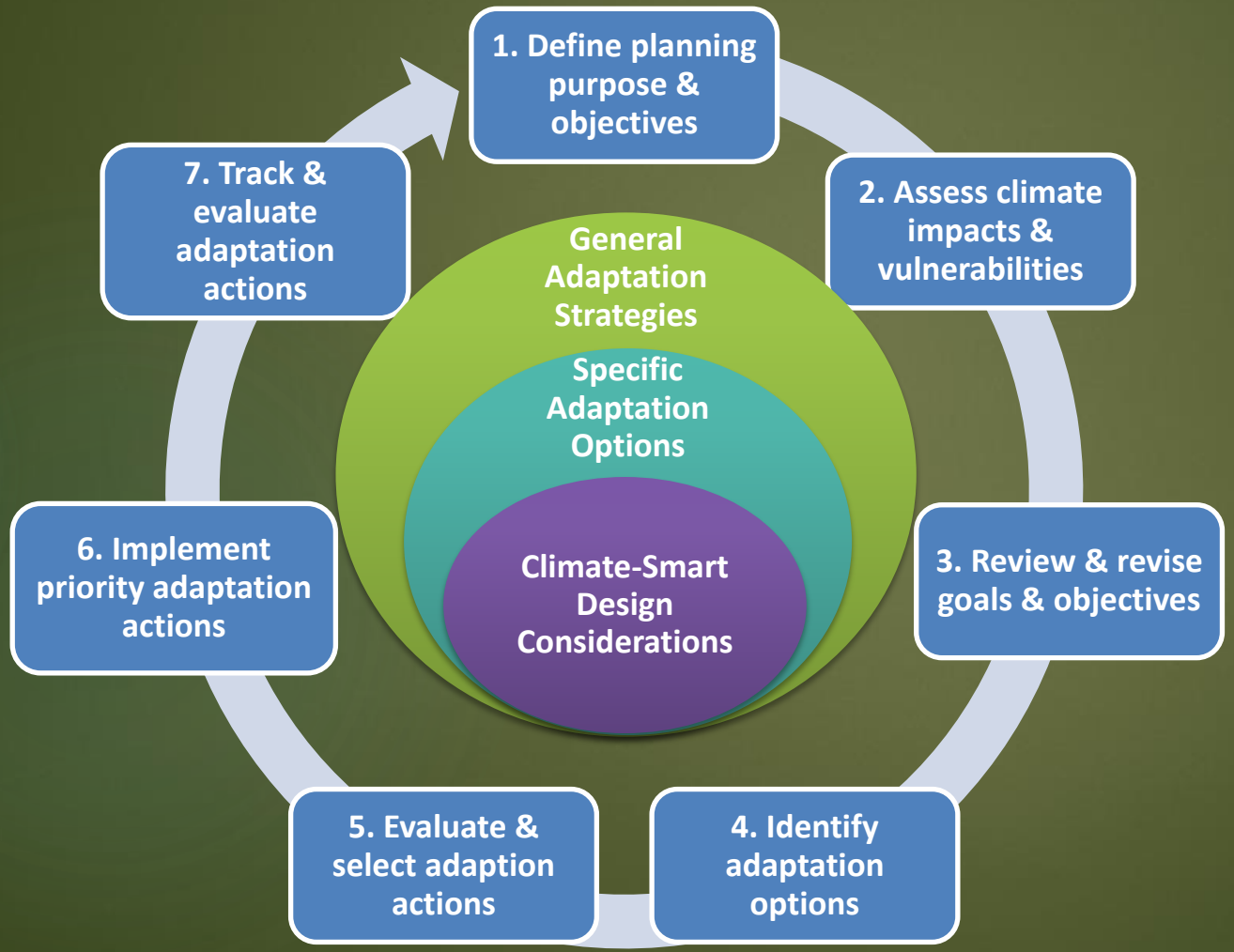
This Project….

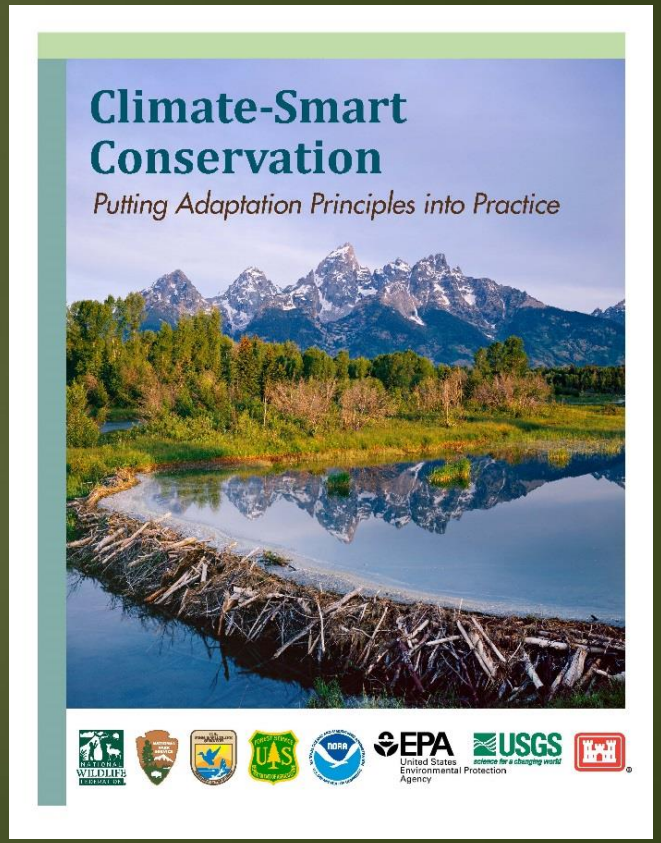
- Advance climate resilience objectives for Chesapeake Bay Agreement
- Use a regionally developed framework/methods to integrate climate change into CBP management strategies and actions
- Engage with selected GITs/workgroups as case studies
- Working toward development of a matrix methodology that will work across the GITs/workgroups

Workshop

- Apply the Adaptation Design Tool to CBP restoration targets
  - Use Black Ducks/Wetlands & SAV groups as case studies
  - Run a set of management actions as examples through the Adaptation Design Tool
  - Begin the process of refining the Tool for the CBP context

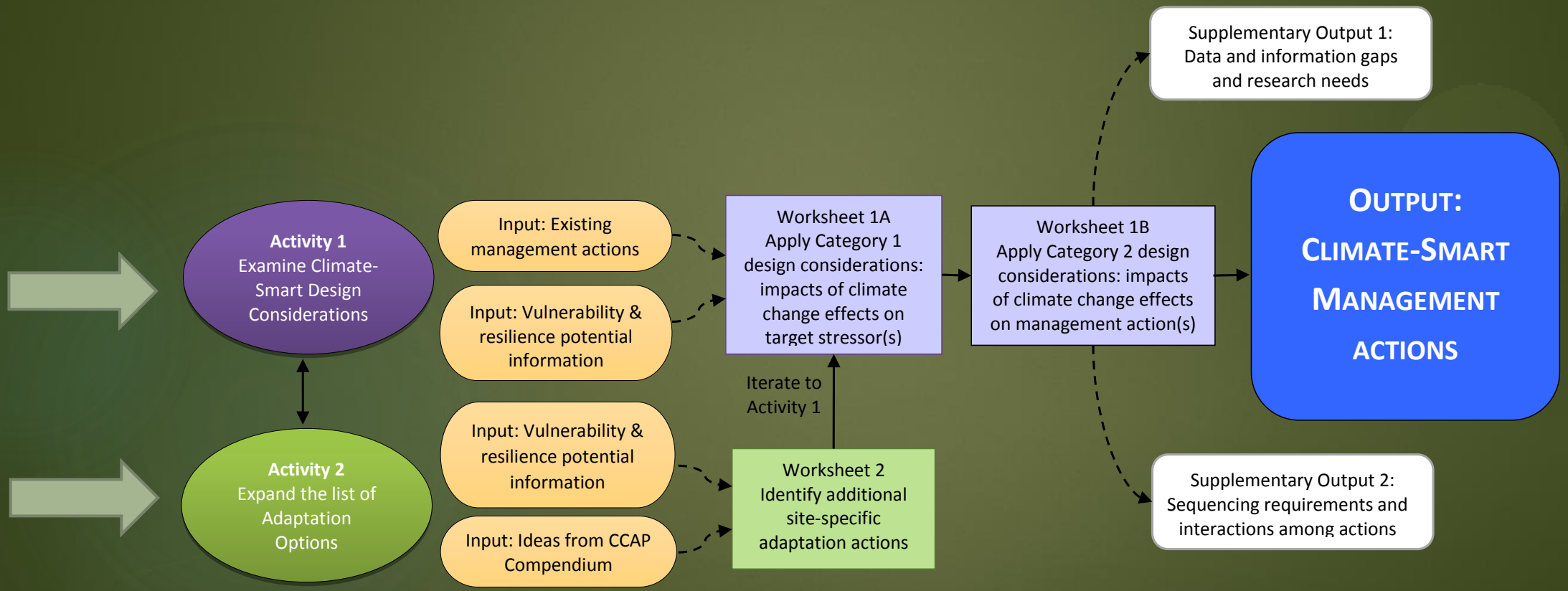
Climate-Smart Cycle with Adaptation Design Framework





Stein et al. (2014)
http://www.nwf.org/ClimateSmartGuide

CCAP Adaptation Design Tool



Activity 1

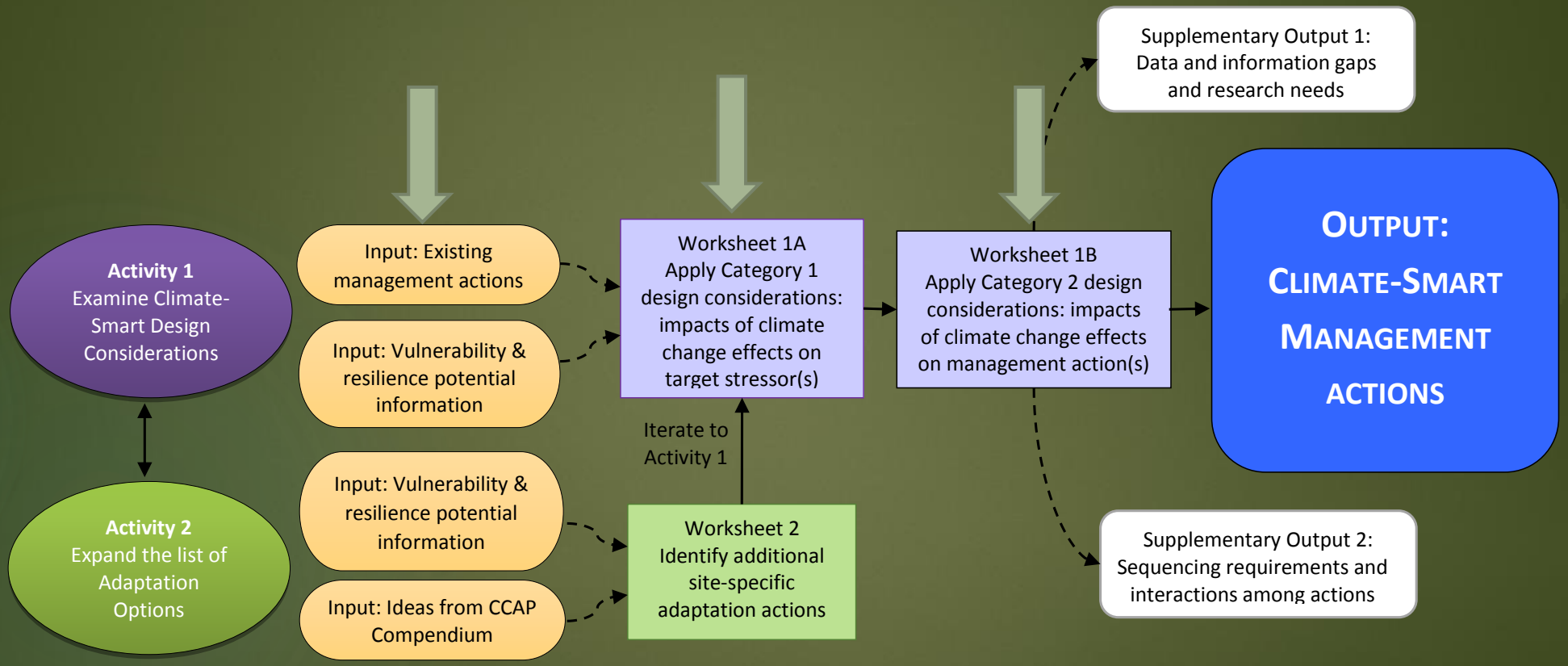
Examine climate smart design considerations

- Start with existing management strategy/list of management actions
  - Based on your goals & objectives
- Information on vulnerability and resilience potential
- The Design Tool then…
  - Supports generating climate-smart versions of the actions
    - How the design or implementation patterns of management actions could be modified for greatest effectiveness in the face of climate change

Climate Smart Design Considerations

- For each action, two categories of Climate-Smart Design Considerations must be applied:
  - Category 1: How will climate change directly or indirectly affect how the stressor of concern impacts the system?
  - Category 2: How will climate change affect the functionality of the management action (either by affecting the management action directly), and how will the action need to be adjusted accordingly (in terms of location, timing, or engineering design)?

Process of Activity 1



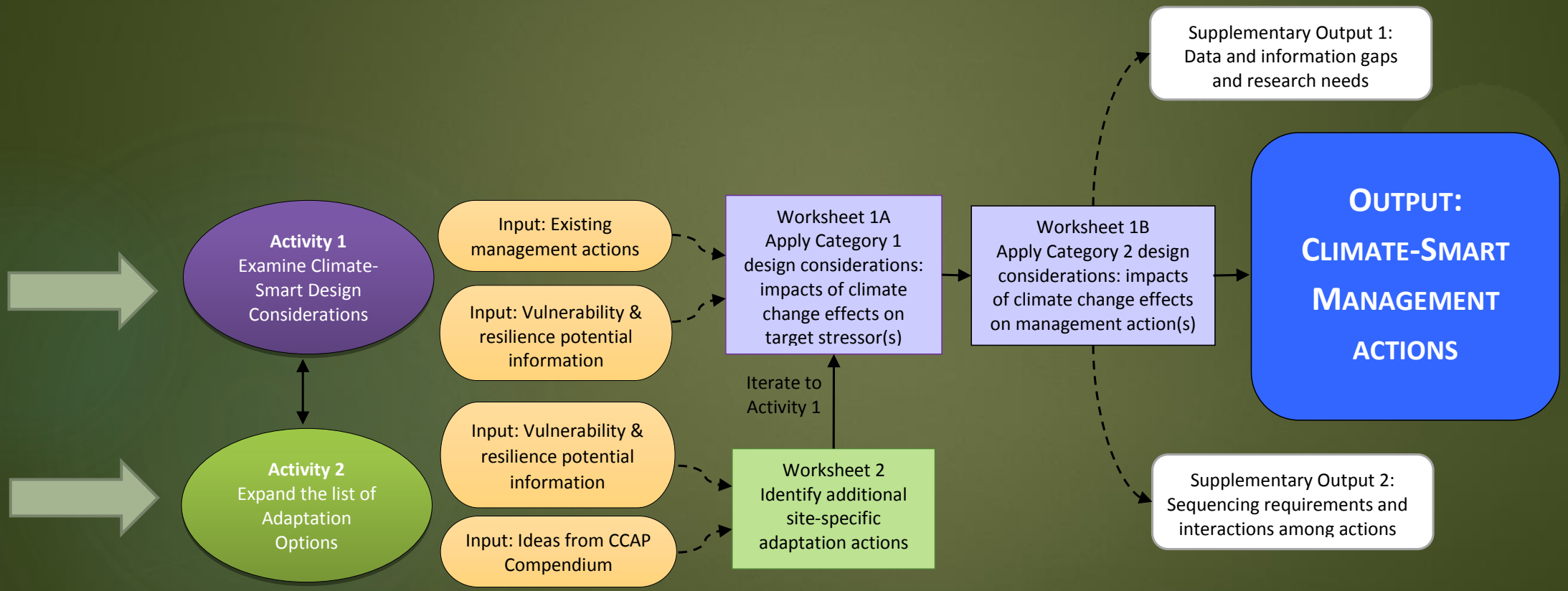
Worksheet 1A

A1	A2	A3	A4	A5	A6	A7
Action number	Existing management Action	Target stressor(s)	Climate change effects on stressors (direction, magnitude, mechanism, uncertainty)	Timing of climate change effects	Implications of A4 & A5 for effectiveness metrics & how to measure them	Notes
1	Install terraces adjacent to dirt roads	Sediment/ nutrients	Heavy rainfalls after dry periods will lead to increased runoff; changing seasonal patterns less understood (moderate magnitude, high uncertainty)	Longer dry periods already occurring, trends of increasing summer heavy rainfall events observed	Monitoring will have to be timed/located to catch effects of extreme events coupled with dry periods	More info needed on spatial patterns of drying and rainfall and location of worst erosion

Worksheet 1B

B1	B2	B3	B4	B5	B6	B7	B8
Action number	Existing Management Action	Changes in effectiveness of management action due to: climate impacts on target stressor	Changes in effectiveness of management action due to: climate impacts on management action	Time frame or constraint for using the action (e.g., urgency, longer or shorter term)	What changes are needed to adapt the action (place, time, and engineering design)	Climate-Smart Management Action	Notes
1	Install terraces adjacent to dirt roads	Heavy rainfall events following dry periods may overwhelm capacity of terraces	Terraces themselves could be destroyed by extreme events	Life of these practices is 5-10 yrs; need to plan ahead for strategic placement in combination with other actions	Need to adapt action spatially, design terraces to withstand extreme events	Install terraces resistant to extreme events adjacent to targeted roads	How heavy a rainfall event will destroy a standard terrace?

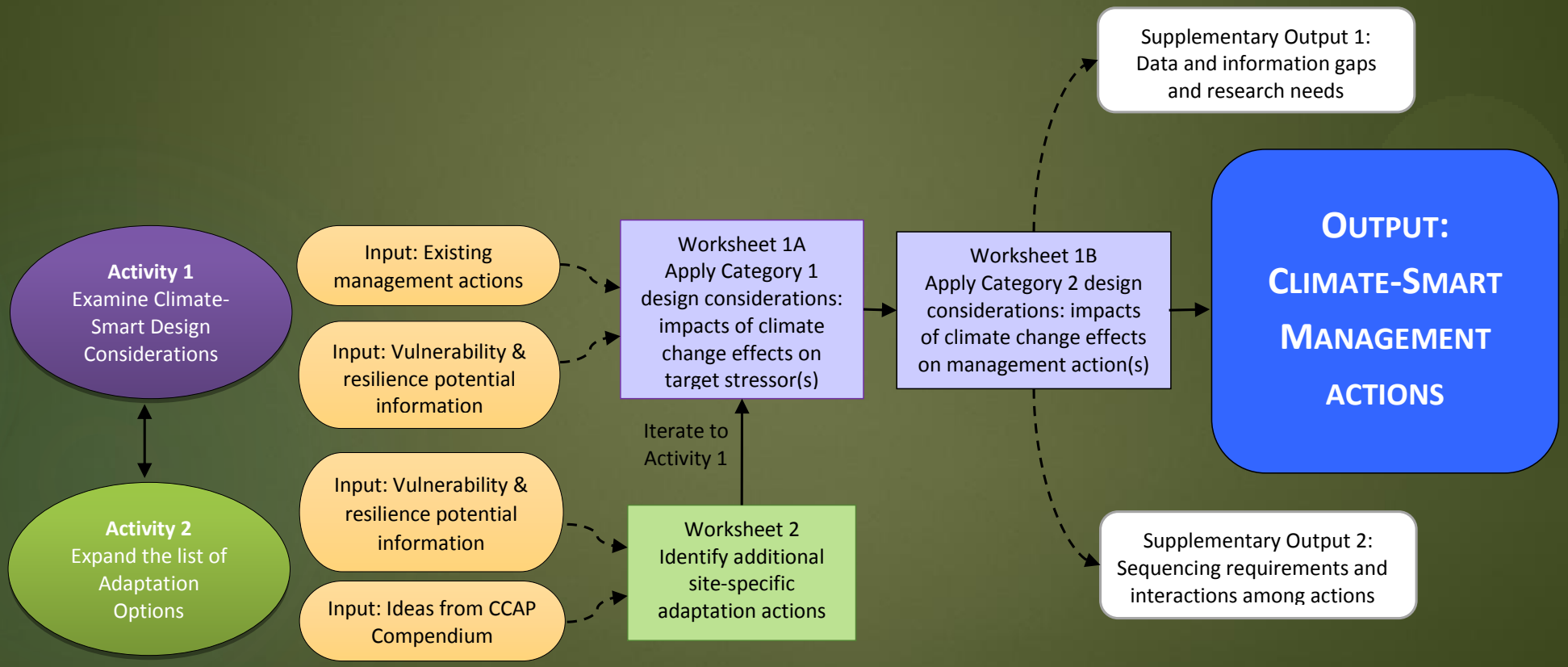
CCAP Adaptation Design Tool



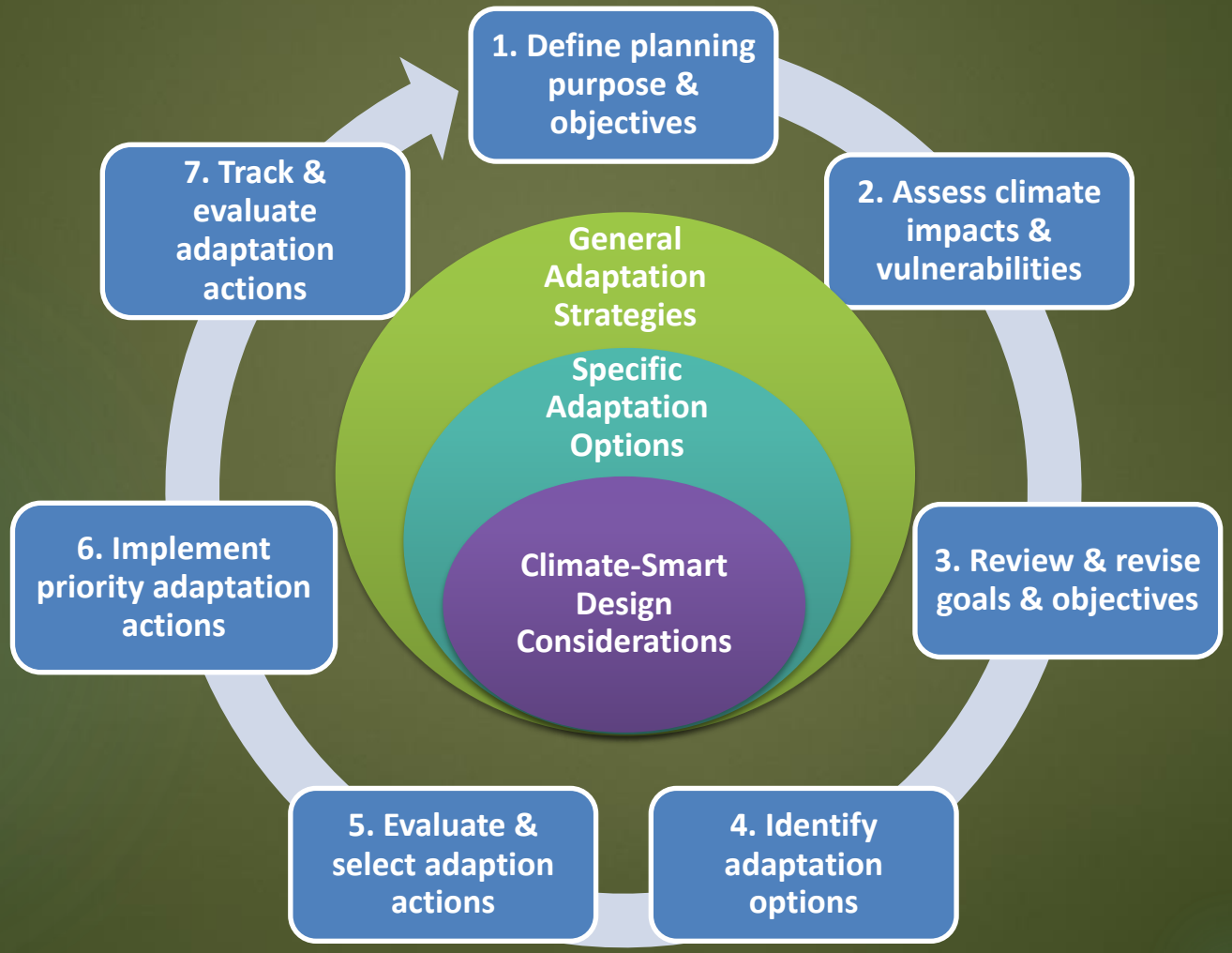
Worksheet 2

1	2	3	4	5
General Adaptation Strategy	Definition	Potential New Site-Specific Action	Key Vulnerabilities Addressed	Notes
Protect key ecosystem features	Focus management on structural characteristics (e.g., geophysical stage), organisms, or areas (e.g., spawning sites) that represent important "underpinnings" or "keystones" of the current or future system of interest)	• Expand or duplicate the herbivore replenishment areas in reefs in the 5 watersheds and adjacent source areas in Olowalu, North Kihei • Protect some of the most durable reef areas (reefs that have survived multiple stressors) as being resilient to multiple stressors	Coral bleaching impacted reefs in 2014 – 2015	Attention to adjacent source areas in addition to the managed reefs associated with the 5 watersheds may extend the area of managed reefs, may require review of goals & objectives

CCAP Adaptation Design Tool



Climate-Smart Cycle with Adaptation Design Framework



Looking forward to the workshop:

- Come ready to engage.
  - This is a hands-on workshop, and we are looking forward to your active participation.
- We will send some resources, which you can use for preparation, or for reference during the workshop.
  - This presentation.
  - The draft Tool Guidance (not yet for general distribution).
- Workshop materials are posted under the "Meetings" Tab on: http://www.chesapeakebay.net/groups/group/climate_change_workgroup